MARCH 2014 | **#147** | £4 / €7 / $13

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TOTAL WAR SHOGUN 2
EMPIRE
MEDIEVAL: TOTAL WAR™ VIKING INVA
Shogun: Total War™ - The Mongol Inva
TOTAL WAR SHOGUN 2
TOTAL WAR
ROME
TOTAL WAR SHOGUN 2 FALL OF THE SAMURAI LIMITED EDITION

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We're one of Europe's largest, and among the longest established studios in the world with 26 continuous years in business. We plan to be around for many years to come.

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develop

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GDC
GAME DEVELOPERS CONFERENCE

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GDC 2014: THE ULTIMATE GUIDE
Expert advice, full registration and conference times, the best sessions of the week and where to get a beer – we've got GDC 2014 covered

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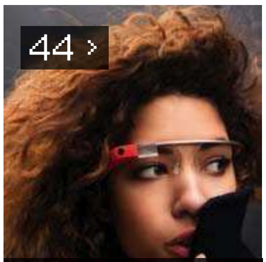
MOLYNEUX
"F2P greed must end"



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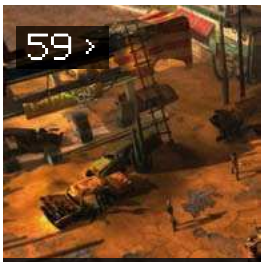
WEARABLE TECH
How devs can use it



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Highland talent speaks

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EDITORIAL

CALIFORNIA DREAMING

I'VE NEVER BEEN to GDC.

But I have heard peers and colleagues wax lyrical about how much they learn from just one week in San Francisco, how they see the foundations of games development's future laid out in a series of lectures, keynotes, tutorials and panel sessions.

So it's with no small amount of anticipation that we've compiled this bumper issue of *Develop*, complete with a six-page guide to this year's Game Developers Conference, which starts on page 13. If you're one of the thousands of people reading this on the show floor, be sure to check it out so you don't miss the best GDC has to offer. We've even included some handy GDC tags on partner pages and company profiles so you can find our featured firms on the show floor.

If you're unable to attend GDC, we still have plenty for you to enjoy. Much of the California conference is dedicated to new and emerging trends in video games development, and we've followed suit with a fresh look at wearable technology on page 44, second screen game design on page 47 and the opportunities of Linux on page 59.

Our monthly Region Focus returns with an extended look at the developers of Scotland – six pages dedicated to the home of *Grand Theft Auto* that begins on page 32.

And then there's the not-so-small matter of the 2014 Develop Awards. We've opened lobbying earlier than usual so you have plenty of time to nominate your peers, your friends or even yourselves, with four new prizes added to the mix. Everything you need to know about lobbying starts on page 23.

After putting together an issue this packed, GDC can only be relaxing, right?

James Batchelor
james.batchelor@intentmedia.co.uk

James

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Molyneux: F2P studios cannot continue ‘grooming children’

Dungeon Keeper creator slams free-to-play as UK devs welcome new rules from Office of Fair Trading on IAPs

by James Batchelor & Craig Chapple

FABLE CREATOR PETER Molyneux has warned that “brutal” and “greedy” free-to-play mechanics are inviting government legislation, something he believes will be detrimental to the industry.

Speaking to *Develop*, the veteran developer discussed his disappointment at the “brutality” of the F2P mechanics in the new *Dungeon Keeper*, a reboot of one of Molyneux’s past projects.

“We cannot continue to be obsessively greedy with our consumers, grooming children for hundreds of pounds from their parents’ accounts,” he said.

“I hate the term ‘free-to-play’, and I hate the way the model is burning through our consumers and the tender shoots of new gamers. I think the world is ready for a new way to approach that whole angle.

“What we’re doing with *Godus* is ‘invest-to-play’. When players spend money, whatever they receive must feel like an investment not a cheat – that feels like a more responsible way of monetising free games.”

His comments follow the release of new rules concerning IAPs in kids’ games following an investigation by the Office of Fair Trading – something that has been welcomed by UK developers.

UK games companies have been told they have until April 1st “to get their house in order”, and must now be upfront about all associated costs with a game, such as if they include microtransactions or whether they use advertising.

Clockwise: Peter Molyneux, Nick Baynes, Seb Long and Simon Hade. Below: Dungeon Keeper (left) and Smurf’s Village (right)

> *If we’re not very careful, we’ll be in the same place that gambling apps are now.*
>
> Peter Molyneux

Failure to comply with the new principles could result in enforcement action from April 1st onward. The OFT claims it has worked closely with international partners to ensure new principles are “consistent with the laws of most key jurisdictions to help raise standards globally".

“Targeting children with aggressive free-to-play monetisation tactics is irresponsible,” said Simon Hade, founder of *Samurai Siege* developer Space Ape Games.

“As a parent of two young children and a games developer I’m pleased to say I see very few examples of developers who do engage in the kind of conduct the OFT is concerned about. It’s good to see that these guidelines largely reflect the best practice of successful app devs anyway.”

BigBit studio head Nick Baynes also welcomed the principles, and said transparency from the industry could only be a good thing, both in terms of goodwill and “what’s morally right”.

“The biggest impact I can see coming from these rules is that I suspect we’ll probably see a shift from free-to-play as a viable model for games aimed solely at kids – pushing IAP more softly in a child-focused free-to-play game will of course most likely mean lower revenues so a pre-set fixed price could become the best business choice for that market,” he said.

Seb Long, user researcher at Player Research, added: “Many of the OFT’s principles have crossover with best practices in game usability. Developers will need to work carefully to avoid unintentional breaches as a result of latent usability issues – especially in games for children. The new OFT guidelines could assist developers in not only making games that meet their fair trade obligations, but should also result in games with better usability, understandability, and which deliver better experiences for players of all ages.”

While others support the new rules, Molyneux worries that this will set a precedent for much harsher legistation.

“If we’re not very careful, we’ll be in the same place that gambling apps are now,” stated Molyneux.

“We’ve got to be responsible, and for me basing your revenues off consumers spending hundreds of pounds on an app just isn’t right.”■

HASSLED INDIES ‘NEED A SKIN OF STEEL’

MOLYNEUX WAS SYMPATHETIC for *Flappy Bird’s* Vietnamese creator Dong Nguyen, who pulled his game from app stores last month in the face of mounting pressure and public attention.

“Making games is an insanely hard thing to do – you burn your existence out,” he said. “You’re not burning the candle at both ends, you’re taking a flamethrower to it. You almost destroy yourself, especially if you’re a small indie.”

He also commented on the Twitter abuse directed at Nguyen after *Flappy Bird* was pulled from the stores, something that also caused *Fez* creator Phil Fish to quit games development.

“When you put your game out there, the huge weight of social media now is incredibly caustic,” Molyneux told us. “You have to have a skin of steel because any negative comment completely drowns out the positive ones. I can totally understand how scary it is.

“There has never been a game that hasn’t had hate mail attached to it, and you have to be ridiculously tough or inhuman in your way of taking criticism.”

develop iPad

Videos are available within the iPad edition of Develop on iTunes and the browser-based Digital Edition, which can be accessed at develop-online.net

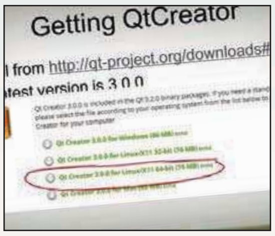
develop
BETA
App attack!

THIS MONTH

Check out the video demos of the latest new technology and design techniques.

Inside Opposable Games' second-screen title Salvaged

P47



Getting QtCreator

l from http://qt-project.org/downloads#

test version is 3.0.0

Get to grips with debugging in Linux

P61

A look at what's to come from Yebis 2

P64

'Direct hires cut costs'

RuneScape developer Jagex explains why it handles all talent recruitment in-house

by James Batchelor

JAGEX IS ENCOURAGING other developers to handle bringing new talent into their studios themselves, citing in-house recruitment as a major factor in the UK firm's growth.

The developer behind *RuneScape* and the upcoming *Transformers Universe* handles the vast majority of its hires without external assistance, something that has contributed significantly to cutting down costs.

"Using this model has ensured not only a higher quality of hire, better matched to our needs and culture, but has also been extremely cost effective," explained Jagex's talent acquisition manager Peter Lovell.

> ***"Using in-house recruitment has ensured a higher quality of hire, matched to our needs."***
>
> Peter Lovell, Jagex

Peter Lovell at RuneScape studio Jagex says bringing recruitment in-house has saved money

"Specifically, we have been able to grow the studio significantly over the past 24 months at a fraction of the cost had we adopted a more externally focused recruitment model. Our estimated savings over the last two years has allowed the organisation to invest heavily in other areas."

His comments follow last month's roundtable feature on in-house recruiters, in which *Develop* erroneously reported that Codemasters hires 93 per cent of its talent directly. It is actually Jagex that holds this remarkable claim.

"We believe this truly demonstrates our commitment to placing talent at the front and centre of all of our business strategies," Lovell said. "We live, breathe and die by the people that make up our organisation.

"Obviously every studio needs to make the decision as to what model works best for their needs. Building an effective in-house recruitment function can be a big step and may seem like a big, luxury investment, especially for smaller studios. But we have learned it more than pays off." ■

Develop conference adds free indie bootcamp

by James Batchelor

INDEPENDENT DEVELOPERS WILL be offered a free series of conference talks at Develop in Brighton this summer.

Tandem Events is keen to continue making the event accessible to start-ups and one-man studios. As always, the Develop expo will be free and this year Tandem is adding events specifically aimed at independent developers.

The Indie Bootcamp sessions will be encompass a broad range of talks aimed specifically at new and indepedent devs. Full details will be announced closer to the Develop conference, which will be held in Brighton from Tuesday, July 8th to Thursday, July 10th.

Studios will also be offered special rates for passes to the Indie Dev Day, while the expo, networking bar and Indie Showcase will remain free. ■

250 devs back Made In Creative UK

by James Batchelor

A CAMPAIGN TO highlight the games being made in the UK has received support from an impressive 250 developers around the country.

The campaign was launched by Philip Oliver (*pictured*), co-founder of Radiant Worlds and the defunct Blitz Games Studios, and is backed by notable studios such as Mind Candy, Crtyek, Codemasters, NaturalMotion and Reflections.

MADE IN CREATIVE UK

Many studios have proudly placed the Made In Creative UK logo on the website and within their games, although Oliver observes others still need encouraging.

"Sadly, the larger the company and the higher profile the game, the more politics there are surrounding the use of the logo," he told *Develop*. "The smaller guys are a lot more active and quicker to include it on their games and websites.

"The UK used to be the third largest producer of video games in the world, but we've dropped to fifth.

"We need students to know that there are great career prospects if they can learn the skills. We need teachers and parents to encourage those who say they want careers in the games industry."

You can email philip@madeincreativeuk.com or visit madeincreativeuk.com for more information. ■

UK developers go full Steam ahead on Early Access

Starbound and Rust sell over one million copies each as British indies lead the way in changing games distribution

by Craig Chapple

UK DEVELOPERS ARE leading the way and finding huge success through Steam's Early Access scheme.

Facepunch Studios' open-world survival game *Rust* is currently one of the hottest sellers, selling over one million copies on Valve's digital distribution platform, and Chucklefish's sandbox adventure title Starbound has also edged itself up to the top echelons of the sales charts shifting 1m copies of its own.

Ndemic Creations has also just released *Plague Inc: Evolved* to Steam, instantly hitting the top ten, and Simon Roth's crowdfunded space colony sim *Maia* continues to sell well three months after its release on Early Access.

Starbound (above), from UK developer Chucklefish, has sold over one million copies, as has Simon Roth's Maia (below)

Top-to-bottom: Garry Newman of Facepunch, Molly Carroll of Chucklefish and Simon Roth

A NEW WAY TO INDIE

"In terms of sales we have done very well, we secured enough funding to complete the game just hours from launch," Roth told *Develop*.

"Two months and a winter sale later, sales are still going strong, putting us in a position where we can start planning for extra content, and start thinking about future games."

Chucklefish community manager Molly Carroll said: "It's worked out really nicely for us overall. We've got a constant stream of feedback coming in from our community. If they love something, we'll hear about it. If they hate something we'll hear about it. If something's broken, we'll definitely hear about it. It's been useful for development, and generally the community is really understanding of the fact that the game is in beta."

Facepunch had previously been selling alpha access of *Rust* through its own website using PayPal, but indie developer Garry Newman said that payment method had been terrible for the team, having to manage all of the VAT, distribute files themselves and deal with lost passwords and account recovery.

"We now throw updates out as often as we can," said Newman. "We have different branches. The dev branch is tied right into our build servers, so when we commit code it compiles and it's live on the dev branch within a couple of minutes. We don't have to handle payment, we don't have to worry about VAT and sales tax. We don't have to handle chargebacks and refunds. We spend the huge majority of our time making the game instead of dealing with all the other bullshit."

> ***"We secured enough funding to finish the game just hours from launch."***
>
> Simon Roth

LAUNCH PAD FOR SUCCESS

Roth said Early Access can be a great launch pad for small indie developers to soft launch on Valve's marketplace, given the troubles a full release can throw up, particularly on PC.

"Releasing a game never goes quite to plan, so being able to get that out of the way early on is a massive benefit to me in terms of project management," he explained.

"It takes some of the stress out of development that can crush creativity and cause mistakes to start to slip in. The focus now can be purely on delivering the game.

"Another reason we launched on Early Access was it's strength in raising awareness of the alpha. With a game on Steam, visibility increases significantly. We actually had to take on external PR just to manage the deluge of preview requests coming in. And being in the store made it far easier to generate and distribute game keys to those YouTube personalities and streamers."

Newman added that Early Access is fantastic for creators like Facepunch, unsurprising given the title has sold more than one million copies since it was released in December.

But the Facepunch developer and Roth said there could still be a couple of slight changes to make the scheme a better experience for developers and players.

"It could probably be made a million times more obvious what Early Access is, to educate users that they're not buying a finished product," said Newman. "But maybe that's something developers need to do themselves because each game will be in a different state."

Roth added: "I'd like to see some changes to the review system that take into account the fluidity of the development process." ■

DEVELOP DIARY

Your complete games development events calendar for the months ahead

DIARY DATES

QUO VADIS 2014
April 8th to 10th
Berlin, Germany
www.die-entwicklerkonferenz.de

MARCH 2014

TIGA GAMES SUMMIT 2014
March 7th
London, UK
www.tiga.org/events

GAME CONNECTION AMERICA 2014
March 17th to 19th
San Francisco, USA
www.game-connection.com

GDC 2014
March 17th to 21st
San Francisco, USA
www.gdconf.com

GPU TECHNOLOGY CONFERENCE 2014
March 24th to 27th
San Jose, USA
www.gputechconf.com

APRIL 2014

MCV AWARDS 2014
April 10th
London, UK
www.mcvawards.com

GAMES FOR CHANGE FESTIVAL 2014
April 22nd to 24th
New York, USA
www.gamesforchange.org/festival

EAST COAST GAME CONFERENCE 2014
April 23rd to 24th
Raleigh, USA
www.ecgconf.com

F2P SUMMIT
April 24th
London, UK
www.f2p-summit.com

NEXT MONTH'S ISSUE

Develop #148 – April 2014

GET YOUR GAMES ONTO NEXT GENERATION SYSTEMS

We speak to Microsoft and Sony about how developers large and small can gain access to development kits, tools and more for Xbox One and PS4.

XBOX ONE VS PS4: DEVELOPERS' VERDICT

Studios discuss their experiences developing for each console, the strengths and weaknesses, which they prefer and what they want to see added in future.

SELF-PUBLISHING

A look at the self-publishing options, present and future, available to developers on consoles, handhelds and mobile, and the potential audience each one opens up.

CLOUD GAMING

Platform holders have waxed lyrical about the power of the cloud and the opportunities it offers. *Develop* investigates the possibilities afforded by cloud processing.

GUIDE: ENGINES

Develop offers a breakdown on the different engines on which games can be based, weighing up the strengths and weaknesses of each. We also speak to studios about which engines they choose and why.

REGION FOCUS: FINLAND

Develop travels to Finland – home to the likes of Rovio and Supercell – to bring you an extensive look at the games makers and services that are making the Nordic region blossom.

COMING SOON

DEVELOP #149

MAY 2014

- Free-to-play games
- QA and localisation focus
- Web development
- Guide: Free middleware
- Guide: Graphics and rendering tools
- Region Focus: East Coast, USA

DEVELOP #150

JUNE 2014

- Racing Special
- Exploring Artifical Intelligence in games
- A view on voxels
- Guide: User interfaces
- Region Focus: Canada

For editorial enquiries, please contact James.Batchelor@intentmedia.co.uk
For advertising opportunities, contact Alex.Boucher@intentmedia.co.uk

AT A GLANCE

MARCH 7TH
SXSW Gaming Expo
Games take centre stage at Austin's annual festival of what's new hot.

MARCH 11TH
Serious Games Conference
The sector that's improving our quality of life shares its progress in Hanover.

MARCH 14TH
Pi Day
Celebrate the mathematical constant by coding on the microcomputer itself.

MARCH 14TH
Need for Speed
Hoping to leave *Fast and Furious* in the dust, EA's racer hits the silver screen.

MARCH 21ST
MGS V: Ground Zeroes
After more misdirection, Kojima's Fox Engine-powered *MGS V* prologue drops.

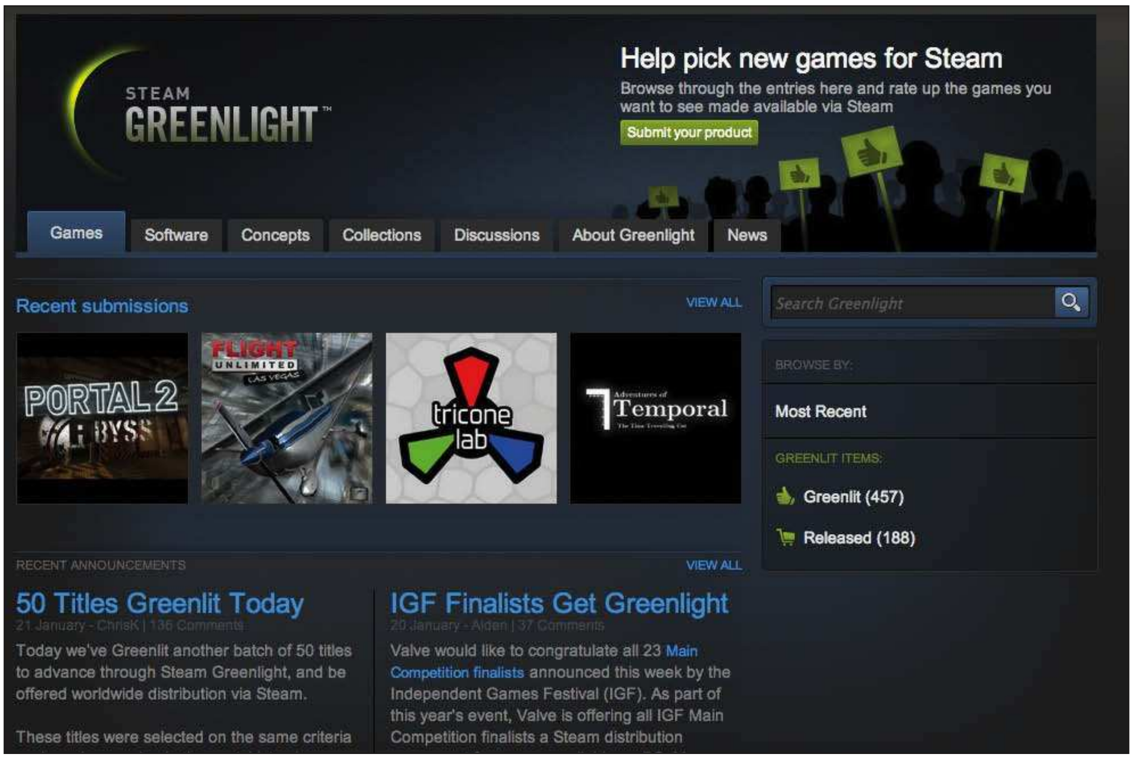
MARCH 21ST
Infamous: Second Son
Feeling heroic? Sucker Punch's acrobatic tale of powered-up superhumans lands.

Variable declarations

//COMMENT: INDIE

Is self-publishing right for all Indies?

Debbie Bestwick explains why going it alone might be more damaging to your game than you think



Browse through the entries here and rate up the games you want to see made available via Steam

50 Titles Greenlit Today

21 January - ChrisK | 136 Comments

Today we've Greenlit another batch of 50 titles to advance through Steam Greenlight, and be offered worldwide distribution via Steam.

These titles were selected on the same criteria

IGF Finalists Get Greenlight

20 January - Alden | 37 Comments

Valve would like to congratulate all 23 Main Competition finalists announced this week by the Independent Games Festival (IGF). As part of this year's event, Valve is offering all IGF Main Competition finalists a Steam distribution

Valve could be set to put an end to Steam Greenlight and pave the way for a flood of new games, in turn affecting discoverability, says Debbie Bestwick

AT THE RECENT Steam Dev Days conference, Valve co-founder Gabe Newell effectively said that Steam Greenlight is going away. The back-end tools that Steam has been working on for the past 12 months are almost complete, meaning developers can create their own store pages, set pricing and manage their titles' lifecycles on the platform with the minimum of fuss.

This will effectively open up the route to market for one and all and I'll be very interested to see how many titles will flood onto the platform in 2014. Steam's growth has certainly been impressive with 2013 seeing 636 titles being released – a year-on-year increase of 66 per cent.

So, with everyone having been given the keys to the kingdom, what does this mean for indies? Well, I suggest you pack your waterproofs, because it's not going to be plain sailing for everyone – things are going to get rough. Sure, Steam's userbase will continue to grow but with an unchecked deluge of releases, how are you going to make sure your game gets noticed?

Multi-platform, triple-A titles will undoubtedly rise to the top, buoyed by their substantial marketing budgets. It's the smaller, independent titles that might just struggle to get noticed and that's a shame as these games are more often than not the ones that deliver the innovation and experiences that gamers insatiably desire.

The route to market on all platforms is becoming far less restrictive, leaving indies with options.

> ***"I firmly believe that no one needs a publisher anymore. We need a partner or partners that deliver the parts we aren't skilled to handle."***

Traditionalists may prefer the old model of signing up with a publisher and letting them handle all the sales, marketing and distribution side of things. There's nothing wrong with that at all; but it does involve letting go of a larger slice of your revenue and do you really retain your independent identity, or even your own IP?

Maybe the answer is a spot of DIY? After all, you've been handed all these new online tools so how hard can it be? A few lines of text, a couple of screenshots, a nice piece of key art – just click 'publish', sit back and watch your game climb the charts – or sink without a trace.

In reality self-publishing takes time, lots and lots of it. It's no wonder that publishers employ entire departments focused solely on sales and marketing: they're full-time jobs. Have you really got the time to juggle running your business, developing a game and publishing it, not to mention giving each discipline the focus and attention it really needs? Looks like you could end up caught between a rock and a hard place, right?

What I believe independent developers need is choice and freedom. After all, we don't live in a 'one size fits all' world. For me, the answer lies with indies forging ties with like-minded partners that are already operating in the brave new digital world. Such collaborations should allow indies to operate with full flexibility.

PUBLISHING AS A SERVICE

Publishing duties should be viewed as a menu of services from which indies can choose which ones they already have the necessary skills to carry out for themselves and which they need to plug into their games business.

It's all about the complete lifecycle management of a title from its initial announcement right the way through launch and then months and years after. A well chosen partner should be able to offer advice on best practices for platforms, help with discoverability, development and production resources, art, code, audio, QA, localisation, customer support resources, PR, marketing, sales and, in some cases, financial support.

Team17 recently announced its return to third-party publishing with a deal done for the game *Light*. Just a Pixel is a small independent developer based in Brighton, consisting of two ex-EA employees. In addition to maximising the success of each title, our focus is to help and share our knowledge with indies to understand the gaming revolution that is happening.

Innovation on all levels is fundamental to survival for all and people need to broaden their skill sets in order to compete today. I firmly believe that no one needs a publisher anymore. We need a partner or partners that deliver the parts we aren't skilled to handle. We should expect an unprecedented level of trust and transparency – it's beneficial for all concerned. We should expect the percentage splits to reflect this and most of all we should retain IP and be in control of our games.

Debbie Bestwick is one of the founding members of Team17. She pioneered the company's leap into digital publishing, and was promoted to CEO in 2009. Find her on Twitter: **@djbteamsters**
www.team17.com

//COMMENT: BUSINESS

See you Wii U?

Nick Gibson explores the most overlooked factor in Nintendo's struggles: its own success

THE WII U'S UNDERPERFORMANCE has hit Nintendo's share price hard in recent months. The limited scope and appeal of its software line-up has been identified as a key factor in its underperformance; but claims about over-pricing are less convincing. But at a recent Nintendo event I got to explore data that suggests two other critical factors, both tied inextricably to players past and present.

Surprisingly, a huge factor is the ongoing appeal of the Wii. And yes, I do mean the Wii.

On the surface, the original Wii's latest sales figures suggest a moribund platform. It may not have sold in significant volume for several years but the Wii install base is still remarkably active. Nintendo's usage tracking data indicates that 50 to 60 million people worldwide used a Wii console in the last 12 months. 30 million people used *Wii Fit* alone in the last 12 months – an absolutely remarkable feat for a peripheral that launched in 2007 and was last revised in 2009. The problem is that the Wii's active userbase of mass market families has little overlap with Wii U's current demographic.

Nintendo initially sought hardcore gamers and the core Nintendo fanbase with Wii U, the flagship status of launch title *ZombiU* a case in point. According to Nintendo, the Wii U userbase is currently clustered around16 to 30-year-olds, 65 per cent of whom are male. This represents a fundamental shift away from the mass market, family-oriented demographic that fuelled Wii's success and pits it against Microsoft and Sony's consoles, a war on two fronts it was never going to win. Where *Wii Fit* and *Wii Fit Plus* have managed well over 40m units between them, *Wii Fit U's* sales are in the low hundreds of thousands.

CAN NINTENDO PERFORM A WII U-TURN?

So, with Wii U stuck in a demographic cul-de-sac, Nintendo's challenge isn't just how to field better games, it's also how to upgrade the sizeable active Wii userbase that's both happy with its existing console and is either unaware of or unconvinced about the Wii U.

Nintendo's initial marketing focus on more hardcore gamers unsurprisingly failed to reach the typical Wii family and a more mass market Wii-like approach has yet to reap much reward. HD graphics and tablet-like interfaces are not sufficient to tempt the existing *Wii Fit* crowd. They need to be incentivised by other factors; by genuine software and hardware innovation, by the sorts of novel gameplay experiences that Nintendo has repeatedly come up with in the past.

> ***"Nintendo's TV console business was in long-term decline before the Wii bucked the trend. Its highest selling console was the NES in the '80s."***

Nintendo has historically been dismissive of the competition from other mass market platforms such as smartphone, tablet, and even Facebook.

But can't all these platforms co-exist with relatively limited cannibalisation? After all the 3DS continues to sell in substantial volume. We think it is unlikely Nintendo will be able to pull off that feat again and reckon that, as it stands, lapsing Wii users will be just as likely to jump to other platforms or leave gaming altogether as Nintendo transitions to Wii U.

Perhaps Wii U will hit analysts' forecasts of 20m units lifetime sales. With the right games and more effective marketing it could well achieve this. However, it should be remembered that Nintendo's TV console business was in long-term decline before the Wii bucked the trend. Its highest selling console was the NES in the '80s and every single subsequent generation saw a material install base decline, with the GameCube managing under 22m units.

Despite experiencing huge success targeting the mass market and families with the Wii, Nintendo appears to have shifted to the core audience with Wii U, says Nick Gibson

Millions are still enjoying the Wii and think fondly of the Wii brand, but without a clearer upgrade strategy and more of the innovation for which Nintendo is famed, there is every chance that Wii U will simply resume the longer-term Nintendo console slide. The Wii's success may be the most phenomenally successful blip in games history.

Nick Gibson is a director at Games Investor Consulting, which provides commercial check-ups, strategy and data to games, media and finance companies.
www.gamesinvestor.com

//EXTRA CONTENT ONLINE

"Free-to-play games have to work a lot harder to keep you playing. We have to make a better game because it matters more."

Why IAPs aren't inherently evil
Oscar Cark, Everyplay
http://deve1op.net/1doBFHl

"It was pleasing to see the OFT really push home the point that parents and carers have lots of parental control options to avoid this happening."

How will OFT rules affect devs?
Jo Twist, UKIE
http://deve1op.net/MA0nza

"Graduates are highly sought-after and studios must react by opening their toolbox for ways to attract the generation of students."

Benefits of graduate recruitment
Sue Stather, Jagex
http://deve1op.net/1kbVD0g

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Develop Awards 2014: Full lobbying guide p23

Scotland's digital talent speaks p32

What wearable technology means for devs p44

GDC 2014

Are you ready?

The Game Developers Conference is upon us once more, and *Develop* has compiled a comprehensive guide to the most important games development event of the year – from the best sessions to the best place to grab a brew, we've got you covered

THIS MONTH, THE global games industry's attention will be focused on San Francisco as developers, publishers, platform holders and more flock to the Moscone Center for the Game Developers Conference 2014.

It's both business as usual and a time for something fresh as games firms share their early experiences with the new generation of home consoles and the ongoing rise of smartphone, tablet and free-to-play games.

This year's GDC promises to be just as special as its forebears and general manager Meggan Scavio expects it will continue to offer the opportunities that have made the event such a key staple in the gaming calendar.

"GDC is the one event that brings together the entire breadth of the video games community in one location," she tells *Develop*. "It's the place where developers share best practices in an open environment.

"Attendees will learn new processes, discover new technologies, hear about what has and hasn't worked from their peers, and meet future business partners – there is nothing to lose here."

It's a hectic week for those attending, but fortunately *Develop* has prepared the ultimate show guide to ensure you are properly prepared.

Over the next five pages, you'll find all of the essential facts and times to ensure your visit to San Francisco is a fruitful one, as well as our picks of the most promising panels and sessions throughout the week. Plus, we have tips from across the industry on how to get the most out of GDC.

The organisers have their own favourites, with Scavio eagerly anticipating the show's first night.

"I'm always excited to attend the IGF and Game Developers Choice Awards on the Wednesday night of GDC. It's open to all and feels like a true celebration of our industry," she says.

"I'm also really looking forward to our expanded Advocacy Track. Last year's sessions proved to be some of the most intense, thought-provoking talks of the year.

"The can't-miss-panel of the year definitely goes to the second annual #1ReasonToBe, moderated by the amazing Brenda Romero. Make sure to check that one out." ▶

GDC IN NUMBERS

5
GDC takes over San Francisco's Moscone Centre for five days

23,000
More than 23,000 industry professionals are expected to attend

300
Over 300 games companies will showcase their wares at the GDC Expo

8
The main conference is split into eight focused tracks

400
More than 400 sessions are scheduled for the week

2
Two full days of tutorials and workshops will be spread across the Monday and Tuesday

8
There will also be eight specialised summits held, which include lectures, panels and post-mortems

GDC 2014

All you need to know

THE FACTS

WHERE

Moscone Convention Center, 747 Howard Street, San Francisco, CA 94130

WHEN

Monday, March 17th to Friday, March 21st

Summits, Tutorials and Developer Days: Monday and Tuesday, 10am to 5.30pm
Main conference: Wednesday to Thursday, 10am to 6pm; Friday, 10am to 3.30pm
GDC Expo: Wednesday to Thursday, 10am to 6pm; Friday, 10am to 3pm
Business Center: Wednesday to Thursday, 10am to 6pm; Friday, 10am to 3pm
Career Center: Wednesday to Thursday, 10am to 6pm; Friday, 10am to 3pm
GDC Play Pavilion: Wednesday to Thursday, 10am to 6pm; Friday, 10am to 3pm

HOW TO REGISTER

Registration is open from Sunday, March 16th, 3pm to Friday, March 21st, 3.30pm. For live assistance, call 415 947 6926 or 866 535 8997, or email **gdcregistration@ubm.com**.

ON-SITE PASSES

- ***All Access:*** $2,100
- ***Main Conference:*** $1,475
- ***Summits, Tutorials & Bootcamps:*** $895
- ***Audio Track:*** $895
- ***Independent Games Summit:*** Sold Out
- ***GDC Expo:*** $250
- ***Student Expo:*** $75 (Available Friday only)

GET AHEAD

GDC App
The official GDC mobile app is available on iOS and Android, with a HTML5 version at app.gdconf.com. The app enables attendees to quickly access and manage their meeting schedule, browse the expo floorplan, and search listings for attendees, speakers and exhibitors.

Flash Forward
Held at 9.30am, Wednesday, GDC's sneak peek at the week ahead returns – this time with an extended introduction by PS4 architect Mark Cerny and former Epic Games president Mike Capps. At the core of Flash Forward are the rapid fire pitches as key speakers, selected by the GDC Advisory Board, telling you why you should make time for their session later in the week.

Develop
Keep your browser pointed towards **www.develop-online.net/gdc** for all the latest news, interviews and announcements from this year's Game Developers Conference.

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SUMMITS & TRACKS

During the show, March 17th and 18th will host eight specialised summits exploring specific aspects of games development. This year's summits will be dedicated to:

- ***AI***
- ***Free-to-Play Design & Business***
- ***Game Narrative***
- ***GDC Education***
- ***Independent Games***
- ***Localisation***
- ***QA***
- ***Smartphone and Tablet Games***

The sessions of the main conference are classed under eight dedicated tracks:

- ***Advocacy***
- ***Audio***
- ***Business, Marketing & Management***
- ***Design***
- ***Monetisation***
- ***Production***
- ***Programming***
- ***Visual Arts***

OTHER EVENTS

GDC 2014 will encompass a number of other events throughout the week. Here are the highlights:

Independent Games Festival
The IGF Pavilion will be showcasing the most promising independent games as part of the GDC Expo from Wednesday to Friday, with the best honoured at an awards ceremony on the Wednesday night.

The Game Developers Choice Awards
Held on the Wednesday night in the GDC Ballroom, the awards recognises creativity, artistry and innovative genius across 13 different categories, including audio, design, narrative and more.

GDC Play
Running from Wednesday through Friday, GDC Play gives up-and-coming developers the chance to show off their games to countless industry professionals, with plenty of business matchmaking opportunities for attendees.

GDC 2014

Develop's picks

With more than 400 sessions to choose from, planning your week can be overwhelming. Fortunately, we've scoured this year's session list to highlight the must-see talks on offer, so you can get the most out of your time at the show

MONDAY, MARCH 17TH

Unity crash course for iOS games
36peas founder Gareth Jenkins offers advice on not only building iOS games but leveraging experience from other platforms to improve them, as well as giving an overview of Unity.
10am to 11am, Room 3002, West Hall
Programming track

Using user research to improve narratives
Microsoft Studios' user research group has developed a way to test a game's story early on in production, allowing players to help shape it ahead of release. User researcher Deborah Hendersen reveals more.
11.15am to 11.40am, Room 3016, West Hall
Game Narrative summit

Turing tantrums: AI devs rant!
AI developers from Harmonix, Maxis, Blizzard, Havok and more deliver quick tirades on AI development and the challenges it presents.
4.30pm to 5.30pm, Room 3007, West Hall
AI summit

TUESDAY, MARCH 18TH

Bringing BioShock Infinite's Elizabeth to life: An AI development post-mortem
Elizabeth was the face of one of 2013's most talked about games, and Irrational Games' lead programmer John Abercrombie is on hand to examine how the character was created and infused with her own personality.
10am to 11am, Room 2007, West Hall
AI summit

From Indie to AAA to Indie: Rebirth of Design
Industry veteran and founder of 22Cans Peter Molneux reveals why game design needs more danger and disruptive thinking, particularly when it comes to re-inventing a classic genre.
1.45pm to 2.10pm, Room 2005, West Hall
Independent Games summit

Level design in a day: The importance of everything – analytics of map design
Epic Games' senior designer Jim Brown talks through the successes and failures of level design analytics, and shows how they can be used to improve developers' design processes.
1.45 to 2.45pm, Room 303, South Hall
Design, Production tracks

WEDNESDAY, MARCH 19TH

Keynote: 10 questions to ask about the future of games
GamesBeat's lead writer Dean Takahashi tries his hand at predicting where the industry is heading in an era of free-to-play, download games and widely varied company valuations.
9am to 10am, Room 3022, West Hall
Monetisation track

How to turn a New Leaf at the Animal Crossing
Katsuya Eghuchi and Aya Kyogoko of Nintendo's EAD studio discuss how they took advantage of an increasingly connected world to make an *Animal Crossing* that appeals to both young gamers and fans of the original.
11am to 12pm, Room 135, North Hall
Design track

Enhancing Sportsmanship in Online Games
League of Legends leads the way in online gaming, and lead designer of social systems Jeffrey Lin reveals how Riot Games drew from psychology and social dynamics to make it easy for players to be sportsmanlike.
5pm to 6pm, Room 2001, West Hall
Design track

THURSDAY, MARCH 20TH

Why is Gone Home a game?
Steve Gaynor, founder of *Gone Home*-creator The Fullbright Company, debates how classical definitions of 'games' and 'play' are informing the design of modern video games.
10am to 11am, Room 2001, West Hall
Design track

Classic Studio Postmortem: Lucasfilm Games
Former employees of the iconic studio – including Steve Arnold, Noah Falstein, David Fox, Peter Langston, Chip Morningstar and Ron Gilbert – are reunited to discuss whether a company like Lucasfilm Games could be replicated today.
10am to 11am, Room 135, North Hall
Design track

How to depression-proof your studio culture
Take This founder Russ Pitts suggests ways in which devs can improve the quality of their workplace and their team's mental wellness.
4pm to 5pm, Room 304, South Hall
Advocacy track

Ellie: Buddy AI in The Last of Us
Naughty Dog's engineer Max Dyckhoff reveals how developers can generate a believable 'buddy' character.
4pm to 5pm, Room 2020, West Hall
Design, Programming tracks

FRIDAY, MARCH 21ST

Building customisable characters for Destiny
Bungie technial 3D art lead Scott Shepherd discusses the challenges of creating a highly customisable player system for *Destiny*.
10am to 11am, Room 2016, West Hall
Visual Arts track

The Infamous: Second Son particle system
Sucker Punch coder Bill Rockenbeck explains the components used to create particle effects in *Infamous: Second Son*.
10am to 11am, Room 2020, West Hall
Programming, Visual Arts tracks

Narrative LEGOs
BioShock creator Ken Levine ponders how to make game narratives more interactive by breaking them down to elements that can be recombined in an infinite number of ways.
11.30am to 12.30pm, Room 2001, West Hall
Design track

GDC 2014

Take it from us

We asked a host of industry experts for their advice on getting the most out of GDC. Read on for their pearls of wisdom

Hotel lobbies are great for proper sit-downs, but for quick-and-dirty meetings and demos, sitting down in halls and corridors of Moscone can't be matched.

David Helgason, *CEO, Unity Technologies*

Spend some time on the show floor. Pick out the booths of interest in a first pass then do another pass and make sure you talk to the people on the booth since it's easy to pass by an innovation which isn't obvious from the booth display.

Whatever discipline or interest group you're from, whatever tools you use, do your best to find the related user groups or events and try to get along.

Philip Elderfield, *Product Manager, Vicon*

Make sure you schedule meetings well in advance of the conference. Consider using GDC as the venue to launch new products and build interest towards release during the show. We're looking forward to receiving feedback from our users about the new products we're launching at the show.

Stefano Corazza, *CEO, Mixamo*

Meet new people, see new vendors, new technology, and new presentations. Don't just meet with past friends or current vendors because these meetings are often untimely and do not progress relationships. Go to new events and branch out.

Also bring mailing labels so that you can jot down notes from your conversations with people you meet. You can then stick them to new business cards or flyers – with so many people to see, it's hard to remember every conversation you have.

Pete Busch, *Vice President of Business Development, Faceware Technologies*

Don't just 'wing it'. GDC is full of amazing distractions that make you forget why you're there.

Check the sessions and the exhibits you really want to see, and make a list of the most important ones. There is enough break time between sessions to see all the cool stuff, it just requires planning.

Hydrate and pack snacks. You aren't Superman or Wonder Woman, so take care of yourself. Lines get extra long at anything remotely close to the Moscone Center, and you don't want to waste time instead of being at the show. And plan ahead, party animals.

Wesley Adams, *Marketing Specialist, Autodesk*

Really boil down why you are going and what you want to get out of GDC – what is your success criteria? For example, we are really looking forward to seeing reactions to *ACR Drift* and showing the Chinese version of *Auto Club Revolution*, the first western racing game to be released in China.

Ideally book about 60 per cent of your meetings, and leave about 40 per cent free for people you don't know. It is the people you don't know who will expand your business. Try to secure a meeting room in a hotel or a meeting room on a stand so people know where to come to find you.

And the more you smell, the less you sell – really try not to overdo it on the beer and garlic front.

Darren Jobling, *CEO, Eutechnyx*

The W hotel is a good spot to meet, but quite busy during GDC.

The Museum of Modern Art has a great outside area on the street and right in a sunny spot – brilliant for catching up with people over a beer or a wine, as well as catching up on those emails.

The Samovar Tea Lounge is also a great place for good food and, of course, a good cup of tea. Or coffee, if it's been that kind of day.

Jude Ower, *CEO, Playmob*

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GDC 2014

Where to get a beer

Surviving a week in San Francisco can be thirsty work. After a hard day's work at the main conference, seasoned show attendees recommend the following establishments for that all-important liquid sustenance

THIRSTYBEAR

▲ **The Thirsty Bear**
661 Howard St, CA 94105
Down the road from the Moscone Center, so you're all but guaranteed to bump into someone you know.

▲ **The W Hotel bar**
181 3rd St, CA 94103
A trendy hotel very close to the GDC venue, with a highly popular bar in the lobby.

▼ **The City Beer Store**
1168 Folsom St, CA 94103
Close to the junction of Folsom and 8th, this outlet is a little further from the Moscone Center but offers a wide selection of beers.

CITY BEER STORE

▼ **Chevy's Fresh Mex**
201 3rd St, CA 94103
This Mexican restaurant is said to be quieter than other drinking holes, and does a nice line in margaritas.

▲ **Jamber Wine Pub**
858 Folsom St, CA 94107
While billed as a wine bar, Jamber still offers an extensive beer menu. Far enough from GDC that you've got a decent chance of getting a seat.

▲ **The Redwood Rooms**
495 Geary St, CA 94102
Found in the Clift Hotel, legend has it that the original panelling and bar were carved from a single redwood tree. Bear that in mind when you spill your beer.

▲ **The Starlight Room**
450 Powell St, CA 94108
Claiming to have defined cocktail couture, this swanky bar is found 21 stories above the Sir Francis Drake Hotel.

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To find out more drop by and visit us at booth 402 at GDC or register for the GDC Imagination Developers Connection (IDC) event, taking place in South Hall, room 301 from 10am until 4pm on March 18th.

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Check out the IDC agenda for GDC at imgtec.com/gdc2014

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INDUSTRY EXCELLENCE AWARDS 2014

Is this your year to shine?

The prestigious Develop Awards returns this July but if you want to be nominated for one of the 23 accolades, you'll need to lobby. Not sure how? Don't worry – the following six pages will tell you everything you need to know

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THE CATEGORIES 2014

New Games IP
Use of a Licence or IP
Visual Arts
Audio Accomplishment
New Musical Composition
Use of Narrative
Publishing Hero
Technical Innovation
Tools Provider
Engine
Services
New QA & Localisation
Creative Contribution: Audio
Creative Contribution: Visuals
Recruiter
New Talent Investment
Business Development
Micro Studio
Independent Studio
In-House Studio
New Studio

SPECIAL AWARDS

New Studio of the Year
Development Legend

THREE STEPS TO A DEVELOP AWARD

STEP ONE: Find out if you and your products are eligible

- Nominated games must be released somewhere in the world between May 1st, 2013 and April 30th, 2014. Commercial public beta phases and Early Release are also eligible.
- Is your business based in Europe or the UK? If so, you are eligible – even if you have worked on games developed outside of the region.
- If you're based outside Europe, can you prove worthwhile support or collaboration with studios in the region over the past year? If so, you're eligible for selected categories (check award descriptions).

STEP TWO: Prepare to lobby

- Write a short pitch of 350 words
- Provide five bullet points highlighting any relevant accomplishments.
- Add a list of links to any videos, images, music, websites and so on that support your nomination.

STEP THREE: Send it in

- Email your nominations and the appropriate material to **developawards@intentmedia.co.uk**. The deadline for lobbying is 5pm GMT on Tuesday, April 15th, 2014.

When all nominations and supporting material have been submitted, they are each carefully appraised by the *Develop* editorial team. A shortlist for each award is drawn up based on the lobbying documents and the nominee's industry standing and will be announced in a few months.

Profiles of the shortlisted companies are then sent out to our awards judging panel made up of 100 industry executives. These are hand-picked by the *Develop* team.

The judges confidentially disclose their choices, and the nominees with the most votes in their award category are declared the winners. The names of the judges are only named after the event.

NEW GAMES IP

Who's eligible?
Any UK or European studio-made IP released for the first time, either as a boxed or downloadable product, between May 1st, 2013 and April 30th, 2014. New IPs should have introduced an original brand plus new gameplay aspects and/or original characters to consoles, portable devices or PC.

Previous Winners
2013: *Clash of Clans* (Supercell)
2012: *Frozen Synapse* (Mode 7 Games)
2011: *Enslaved* (Ninja Theory)
2010: *Heavy Rain* (Quantic Dream)
2009: *LittleBigPlanet* (Media Molecule)
2008: *Lost Winds* (Frontier Developments)

USE OF A LICENCE OR IP

Who's eligible?
Any game released in the previous 12 months by a UK or European studio that is a proven quality title, but is based on an external property (licensed or otherwise) not owned or created by its developer.

Previous Winners
2013: *Angry Birds Star Wars* (Rovio)
2012: *Batman: Arkham City* (Rocksteady Studios)
2011: *F1 2010* (Codemasters Birmingham)
2010: *Batman: Arkham Asylum* (Rocksteady Studios)
2009: *LEGO Batman* (Traveller's Tales)
2008: *LEGO Indiana Jones* (Traveller's Tales)
2007: *LEGO Star Wars II* (Traveller's Tales)

VISUAL ARTS

Who's eligible?
Any UK or European studio that has demonstrated impressive graphical and/or distinct, iconic design work in the games or gaming content it has produced and released during the past year.

Previous Winners
2013: Crytek (*Crysis 3*)
2012: Ubisoft Montpellier (*Rayman Origins*)
2011: Playdead (*Limbo*)
2010: Black Rock Studio (*Split/Second*)
2009: Media Molecule (*LittleBigPlanet*) [For Best Audio & Art]
2008: Rockstar North (*GTA IV*) [For Best Audio & Art]
2007: Rare (*Viva Piñata*) [For Best Audio & Art]

AUDIO ACCOMPLISHMENT

Who's eligible?
Any UK or European studio that has demonstrated pitch-perfect audio design, sound, or music creation in its games released during the past year. This refers to the audio design of the whole game. Use of licensed and original tracks can be taken into account.

Previous Winners
2013: Sony London Studio (*Wonderbook: Book of Spells*)
2012: EA DICE (*Battlefield 3*)
2011: Somethin' Else (*Papa Sangre*)
2010: FreeStyleGames (*DJ Hero*)
2009: Lionhead Studios (*Fable II*)
2008: Rockstar North (*Grand Theft Auto IV*)

NEW MUSICAL COMPOSITION

Who's eligible?
This brand new award recognises the achievements of composers and music designers based on a single track from a game or gaming content released in the last year. The track nominated should have been composed by a composer or team based in the UK or Europe.

USE OF NARRATIVE

Who's eligible?
Any game that has made clear efforts to balance storytelling and gameplay design, or experiment with how they are combined. Finalists will be those games that have successfully mixed narrative into the interactive experience. A project's specific writers will be credited where possible.

Previous Winners
2013: Mike Bithell (*Thomas Was Alone*)
2012: The Chinese Room (*Dear Esther*)

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PUBLISHING HERO

Who's eligible?
Any games publisher, developer, hardware manufacturer, platform-holder or investor – from any country – that has supported UK and European games developers during the past year via the publishing, funding, distribution and/or co-development of new games.

Previous Winners
2013: Kickstarter UK
2012: Valve
2011: Valve
2010: Channel 4
2009: Apple
2008: Nintendo

TECHNICAL INNOVATION

Who's eligible?
Any UK or European studio or company that has demonstrated impressive technical innovation in any aspect of games development. The award can be given to a specific tech, title or studio – provided it has been active/released as a new product in the last 12 months.

Previous Winners
2013: Oculus VR (Oculus Rift)
2012: Geomerics (Enlighten)
2011: Microsoft Research Cambridge (Kinect)
2010: Unity Technologies (Unity 3D)
2009: Media Molecule (*LittleBigPlanet*)
2008: NaturalMotion/Image Metrics (GTA IV)

TOOLS PROVIDER

Who's eligible?
Any company, of any nationality, that has released middleware or tools that have enhanced or supported the work of UK or European games development teams in the past year. Developer collaboration, new technology and industry relations are all key.

Previous Winners
2013: Unity Technologies
2012: Epic Games
2011: Autodesk
2010: Hansoft
2009: Autodesk

ENGINE

Who's eligible?
This is an award for the best third-party engines. It's open to any engines, regardless of where it is made, that has enhanced the work of UK or European games development teams in the past year. Weight is given to new versions or significant upgrades.

Previous Winners
2013: Unreal Engine (Epic Games)
2012: Unity 3.5 (Unity Technologies)
2011: Unreal Engine 3 (Epic Games)
2010: Unreal Engine 3 (Epic Games)
2009: Unreal Engine 3 (Epic Games)

SERVICES

Who's eligible?
Any UK or European studio or company that has demonstrated impressive technical innovation in any aspect of games development or aided UK or European development in a significant way. The award can be given to a specific technology, title or studio – provided it has been active/released as a new product in the last 12 months.

Previous Winners
2013: Audiomotion
2012: VMC Game Labs
2011: Audiomotion
2010: Testology

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INDUSTRY EXCELLENCE AWARDS 2013
develop

NEW QA & LOCALISATION

Who's eligible?
This new award is open to any UK or European company that has contributed significantly to usability, testing and translation of games and gaming content, providing these have been released or actively developed in the past 12 months.

CREATIVE CONTRIBUTION: AUDIO

Who's eligible?
Any creative outsourcer that has worked on an individual project in terms of the game's audio. This applies to businesses or individual external contractors that have helped produce, manage or directly generate audio material (music, voice recording or VFX) for games released in the last 12 months.

Previous Winners
2013: Side (*Ni No Kuni: Wrath of the White Witch*)
2012: Side [for previous Audio Outsourcer award]
2011: Side [for previous Audio Outsourcer award]
2010: Side [for previous Audio Outsourcer award]
2009: Side/Sidelines [for previous Creative Outsourcing award]

CREATIVE CONTRIBUTION: VISUALS

Who's eligible?
Any creative outsourcer that has worked on an individual project in terms of the game's visuals. This applies to businesses or individual external contractors that have helped produce, manage or directly generate visual material (CG, video or assets) for games released in the last 12 months.

Previous Winners
2013: Realtime UK (Wargaming trailers)
2012: Cubic Motion [for previous Visual Outsourcer award]
2011: Axis Animation [for previous Visual Outsourcer award]
2010: Axis Animation [for previous Visual Outsourcer award]

RECRUITER

Who's eligible?
Any UK or European company working in the field of recruitment and human resources that has demonstrably served the needs and demands of the UK and/or European development community during the last 12 months.

Previous Winners
2013: Amiqus
2012: Amiqus
2011: Specialmove
2010: Amiqus
2009: Amiqus
2008: OPM

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NEW TALENT INVESTMENT

Who's eligible?
Our third new award recognises efforts made by UK and European studios or companies that have put significant effort into bringing new development talent into the industry and generating interest in games development careers.

BUSINESS DEVELOPMENT

Who's eligible?
Any UK or European studio that has, in the previous 12 months, improved its business as demonstrated by studio growth, acquisitions, investments both inward or outward and/or steps to improve its output, efficiency or commercial performance. This can include the release of works in progress through Beta programmes or appropriate platforms, such as Steam's Early Access.

Previous Winners
2013: King
2012: NaturalMotion Games
2011: Mind Candy
2010: Sony XDev
2009: Playfish
2008: Realtime Worlds

MICRO STUDIO

Who's eligible?
Any UK or European games developer – consisting of an individual or small collective of people up to a maximum of ten at the time of nomination – who have had significant original output in the past year.

Previous Winners
2013: Fireproof Games
2012: The Chinese Room
2011: Mojang Specifications
2010: Hello Games

INDEPENDENT STUDIO

Who's eligible?
Any UK or European games development company, staffed by 11 people or more, and which is not owned or managed by a publisher working on any available game platform. Lobbying studios should have had some significant output in the last year.

Previous Winners
2013: Supercell
2012: CCP
2011: Crytek
2010: Quantic Dream
2009: Media Molecule
2008: Splash Damage

IN-HOUSE STUDIO

Who's eligible?
Any UK or European publisher-owned games development company or in-house games development resource – including those acquired recently –with title(s) released for any games platform in the past year.

Previous Winners
2013: Boss Alien
2012: Creative Assembly
2011: Media Molecule
2010: Rocksteady Studios
2009: Rockstar North
2008: Rockstar North
2007: Ubisoft France

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develop
INDUSTRY EXCELLENCE AWARDS 2013
Winner 2013 - USE OF NARRATIVE
Thomas Was Alone - Mike Bithell

NEW STUDIO

Who's eligible?

Any new UK or European studio that has had its first game commercially released – either via retail or digital distribution – during the past 12 months. Companies do not need to have been founded during that period to qualify.

Previous Winners

2013: Playground Games
2012: Bossa Studios
2011: Mojang Specifications
2010: Hello Games
2009: Media Molecule
2008: Doublesix
2007: Realtime Worlds

NEW STUDIO OF THE YEAR

Who's eligible?

This new Special Award gives singular recognition to a studio that has produced outstanding work in the past twelve months, primarily though any retail or download games that have been released commercially in the past 12 months. It is open to any UK or European games development studio and the winner will be selected by the *Develop* team.

DEVELOPMENT LEGEND

Who's eligible?

The winner of this award, especially chosen by the *Develop* team, is an individual who has made a significant impact on games development – in a commercial, creative or technological sense – during their lifetime and career. As of last year, this award is open to games sector icons from around the world.

Previous Winners

2013: Tim Sweeney & Mark Rein, Epic Games
2012: David Perry
2011: Ian Livingstone
2010: Gower Brothers, Jagex
2009: Phil Harrison

HAVE YOU FORGOTTEN ANYTHING?

Have you lobbied?
No? Send your nominations to developawards@intentmedia.co.uk.

Are you free on Wednesday, July 9th?
If so, come on down: the Develop Awards will be held at the Brighton Hilton Metropole, during the Develop Conference 2014.

Have you booked your place?
We continue to ensure the Develop Awards is an affordable way to attend a key industry event with some of the finest of the global games industry.

Early bird prices, for those tickets or tables booked on or before June 7th, are:

- Gold Table of 10: £2,250 + VAT
- Standard Table of 10 – £1,950 + VAT
- Single Seats – £195 + VAT.

From June 7th the prices change to:

- Gold Table of 10 – £2650 + VAT
- Standard Table of 10 – £2350 + VAT
- Single Seats – £235 + VAT.

To book your place, contact Kathryn.Humphrey@intentmedia.co.uk.

Do you want to sponsor the Awards?
Contact Alex.Boucher@intentmedia.co.uk to find out about the opportunities available, both at the event and in editorial coverage before, after and during the Awards.

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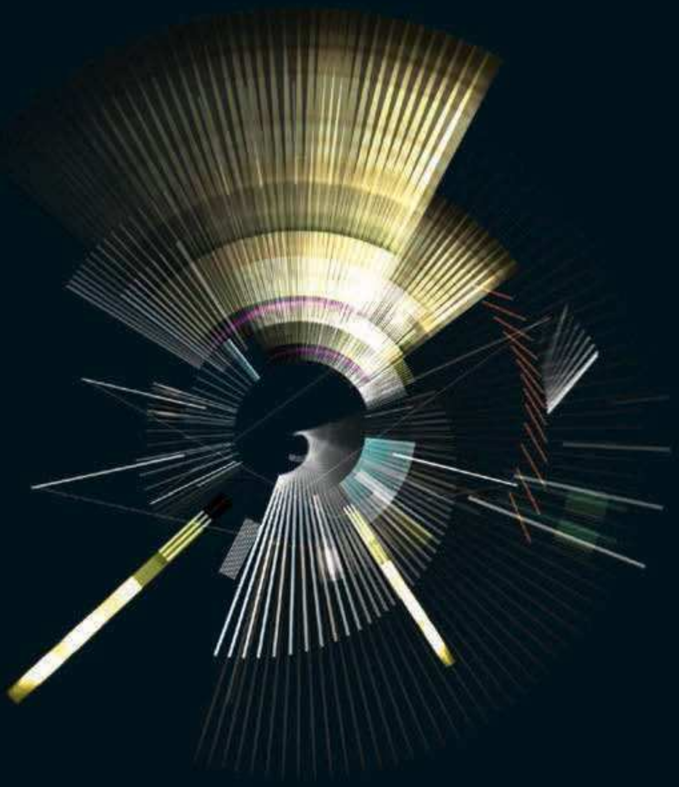

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Highland **games**

Scotland is a nation that potentially faces major political changes this year, but how will that affect the region's impressive output of video games? And how can the local talent base shine when it is constantly overshadowed by Rockstar and its Grand Theft Auto series? **James Batchelor** speaks to the nation's developers to find out

Top-to-bottom: David Thomson, Simon Doyle, Louis Natanson, Brian Baglow, Mark Hastings and Paul Farley

IT'S NO SECRET that Scotland is a hotbed of games development talent.

In our industry, the nation has become synonymous with blockbusters past and present: *Lemmings*, *Crackdown*, *Minecraft: Xbox 360 Edition* and, of course, *Grand Theft Auto*.

While local developers are justifiably proud to be based in the same region as the indomitable Rockstar North and draw inspiration from the studio's world-conquering success, the attention *GTA* receives is as much a blessing as it is a curse.

There are close to 100 development studios in the region – not to mention a plethora of services companies that specialise in audio, trailers and so forth – that face the tough challenge of shouting over the noisy *GTA* juggernaut and highlighting the other great work done in the region.

"*Lemmings*, *Crackdown* and *GTA* are all essentially made by the same core group of people, so it's time to create some new successful and famous games," says Ludometrics founder David Thomson. "We need a strong balance of companies, and right now we're heavily weighted to *GTA* – a series that is owned by a US company which gathers all the profits elsewhere."

Team Junkfish's lead designer and producer Simon Doyle agrees adding: "All roads lead back to [*GTA* creator] DMA Design. You can't attend a local event without tripping over someone who started there."

GREAT SCOTS

There's an urban myth that some of the ZX Spectrums manufactured in Scotland were scooped up before they left the factory by passionate young developers that were keen to hone their own game-making talents. This determination to explore the bounds of creativity has survived in Scotland to this day.

"There's a real passion north of the border for creativity and originality," explains Louis Natanson of Dundee's famed Abertay University. "A very interesting recent trend has been Scottish devs experimenting with completely different approaches to design.

"Denki is a fascinating 'digital toy factory', while Lucky Frame in Edinburgh builds beautiful procedural musical games like *Bad Hotel* and *Wave Trip*. Dundee's Space Budgie created a short experience game called *9.03m* to explore the impact of the Japanese tsunami in 2011. And last year Quartic Llama created the National Theatre of Scotland's first ever game, *Other*, a location-based audio game which guides you on a disturbing tour around the streets of Dundee."

The University of Abertay (above) has become a cornerstone of games education, thanks its Dare to be Digital contest

Unfortunately, these innovative projects do not receive as much exposure as the multi-million selling blockbusters created nearby. Equally those that step away from consoles often struggle to get the recognition they deserve.

"Thanks to the vast majority of developers now working outside the console market, Scotland's been overlooked by the media time and time again," says Brian Baglow, founder of the Scottish Games Network.

> **"*A very interesting recent trend has been Scottish devs experimenting with different approaches to game design.*"**
>
> Louis Natanson, Abertay

"We've got well over 90 studios in the country now, with another 40-plus tech and games-related firms around the country.

"Yet you'd be forgiven for thinking the whole industry upped and left with the collapse of Realtime Worlds if you read much of the gaming press."

Guerilla Tea co-founder Mark Hastings adds that the indie scene is particularly strong: "Start-up costs are relatively low in comparison to other industries, and with graduates battling against the notorious catch 22 of needing experience to get experience, it's becoming more and more appealing to go indie."

ACADEMIC SUPPORT

This creative talent base and growing pool of development studios is fuelled by the support and graduate output of local universities, which offer some of the most renowned games design courses in the UK.

"Our academic setup is second to none," says Tag Games' CEO Paul Farley. "Following the lead of Abertay, a number of universities here now offer excellent games-related computer programming and computer arts under graduate degrees."

IGDA director Luke Dicken adds: "One of the great things about Scotland is our excellent games education programmes. I don't think it's necessarily that developers choose to set up shop in Scotland, more that this is where they have trained and there is no compelling reason to move on."

Finlay Thewlis, game designer at mobile studio Serious Parody, says that there is a financial incentive that helps the universities attract the next generation of talent: "Our students don't have to pay tuition fees. This allows them to go to university on their ability, not on their ability to pay."

Developers also have access to support from a range of government bodies and

TRAINING THE NEXT GENERATION AT ABERTAY.AC.UK

Abertay University

Star Scottish games include Crackdown (below left) and Rockstars's GTA V (above) which made over $1bn in 24 hours

Top-to-bottom: Finlay Thewlis, Adriaen Alexander, Fin McGechie, Michael Boniface, Lol Scragg and Peter van der Watt

initiatives, such as Scottish Enterprise, Scottish Development International, Creative Scotland, Interactive Scotland, and Skills Development Scotland. Start-ups and indies have found these invaluable as they try to establish themselves as viable businesses.

"Organisations like Entrepreneurial Spark give developers the chance to learn the ins and outs of running a business, alongside providing free office space and a community of start-ups which can provide knowledge and valuable connections," says Adriaen Alexander, director at start-up Mental Limited. "We wouldn't be in the position we are today if it wasn't for this particular scheme."

Fin McGechie, creative director of Beartrap Games, adds that the existing talent has also helped grow the start-up landscape: "Although Scotland witnessed a number of large studio closures, this has spurned the creation of many new studios led by people with bags of experience under their belts."

HOME OF THE BRAVE

That's not to say life in Scotland is all rosy. Dickens explains that Dundee and Edinburgh's comparatively remote locations makes things harder than for studios elsewhere in the UK.

"We're doing our best up here but the big events are invariably very England-focused if, not London-centric," he says. "It's always further for us to travel and harder for us to get to things. UKIE, TIGA, IGDA Scotland and SGN are slowly changing this but I see it as a major stumbling block."

Junkfish's Simon Doyle adds that while indies may find success, disinterest from larger publishers hinders any efforts to build on that console blockbuster heritage.

"If we could provide a competitive business environment for large developers and publishers to set up in, there's no reason to believe that with low cost of living and a large source of graduate labour on tap that Scotland's games sector couldn't become a major economic force," he says.

IN THE FACE OF INDEPENDENCE

On September 18th, a referendum will ask everyone in the nation: Should Scotland be an independent country?

It's the culmination of a long-running debate that has divided the region for years and could result in a major political shift, but how will this affect the Scottish industry?

"Should the country become independent, it would mean that Scotland becomes solely responsible for its position in the global gaming market. So it would mean the industry would have to become more independent."

Some believe the borderless nature of games means the impact will be minimal.

"The white paper released by the Scottish National Party makes a lot of promises about what our creative industries could be, but I am dissatisfied with the detail given," says Doyle. "Direct effects on Junkfish are hard to project."

Some studios declined to comment, while others believe there is not enough information for anyone to accurately predict how Scottish independence would either benefit or damage the local games industry.

"Our parent company is American and many of our peers also have international investors, this current level of uncertainty is being viewed as risk and we are seeing existing and future investors becoming increasingly cautious as a result," explains Reloaded Productions MD Michael Boniface.

Binary Pumpkin co-founder Lol Scragg adds: "There are so many unanswered questions that would all have an effect on how independence would affect the business. The only thing we can probably say with any certainty is that independence would probably give us all a short term boost in worldwide PR and searches."

THE NEXT FINLAND?

Not that Scotland's overall games development community is in dire need of PR and greater exposure. The success of *Grand Theft Auto V* did wonders for highlighting Scottish talent last year, and the continued work of Abertay and other universities are bringing new stars to the market.

"I moved to Scotland from far flung South Africa to start Blazing Griffin because I knew about the games industry hub, which includes the educational institutes, as well as the teams and the rest of the industry presence here," says studio founder Peter Van Der Watt.

Aside from potential issues a yes vote for independence could bring, Tag Games' Farley says that Scotland's promise could lead to a new prosperous era for Scottish develpoment.

"We've had the Finnish wave of success particularly in mobile led by Rovio and Supercell. It wouldn't surprise me if the next wave breaks in Scotland." ■

Training the next **generation**

Abertay University's head of games education reveals how to get into games development

Professor Louis Natanson leads computer games education at Abertay University and taught Grand Theft Auto creator Dave Jones

HOW DO I get a job in the games industry? It's a question we're asked a lot, from students finishing their undergraduate degree to primary school pupils visiting our Dare ProtoPlay games festival each August, here in Dundee.

There are lots of answers, but they all come back to one thing – getting real, practical experience of building games in a team. Companies need artists, audio engineers, designers and programmers who, as well as being highly skilled in their area, understand each other and understand the demands of working together to deliver a fantastic digital product.

And it's something we take very, very seriously. All Abertay students get professional mentoring – they have access to over 50 companies, including Rockstar North and Sony, plus PlayStation 4 and Vita dev kits through the PlayStation First initiative. We also have the largest PlayStation Vita teaching lab in Europe.

DEVELOPER LINKS

I've been teaching people for the games industry since the 1980s, when Dave Jones came to Abertay to learn computer programming. Dave was an incredibly intelligent, passionate student, and he was always very open with sharing his knowledge with team members.

He is also a brilliant, inspirational game designer – which became very clear to the rest of the world when he launched *Lemmings* and then *Grand Theft Auto* – two incredible game franchises with their roots right here in Dundee, and graduates of our degree courses.

Since then, there have always been very close links between Abertay and the games industry. Developers are always dropping by to help mentor our students, and we benefit hugely from major global companies like Disney, Microsoft and Sony visiting, giving feedback on student pitching sessions, and helping us to develop our courses.

Why are these links so important? Because we like to think we take a very different approach to games education – by recreating a professional studio environment right here in the university.

All students work in open-plan areas, right next to their lecturers. Everyone freely mixes, sharing ideas, asking questions and collaborating on different game projects. It's a really healthy, safe environment to learn how to be a game developer, whether you want to join an established company or build your own indie business.

Find Abertay Uni at booth 1238

GDC 14

Students and attendees at the Dare ProtoPlay festival 2013 playing one of the entrants touch-screen games

Our Professional Masters in Games Development is the best example of this unique Abertay approach. Over 12 months, teams of students build a succession of fully working game prototypes, reporting to their 'clients' – our lecturers and professional industry partners.

> ***Studying the Masters is like doing Dare to be Digital three times, back-to-back, with the opportunity for a huge amount of personal development.***

Working in a professional studio space, the student 'companies' face a safe version of running a small game developer, with realistic deadlines and client briefs, access to professional dev kits, and industry-standard hardware and software.

PROFESSIONAL MASTERS

We take students from any undergraduate subject that contributes to making games, such as art (audio or visual), mathematics and computer science. It's really competitive to get into the course because you'll spend a year with other very bright, very motivated developers looking to break into the industry.

There's no doubting the year is a big challenge, but it's the closest any student will get to being part of a game studio while still studying. And it's really important to us that young professionals get the chance to experiment, to make mistakes and learn how to work effectively in teams, before launching into their first jobs or starting their own businesses.

V&A Game Designer in Residence Sophia George completed this course before founding her studio Swallowtail Games, as did local developer Guerilla Tea who just released Cancer Research UK's first mobile game. It's a practical, hands-on environment for people who want to make an impact on the games industry and get noticed.

DARE TO DUNDEE

A lot of the approach on the Professional Masters in Games Development is the same as Dare to be Digital, the student game design competition we run every summer. There, students from all over the world get eight weeks to build a brand new game, with all the finished games going on show at our Dare ProtoPlay games festival in August. Competition to get into Dare is fierce.

Studying the Professional Masters is like doing Dare to be Digital three times, back-to-back, with the opportunity for a huge amount of personal and professional development from one dev cycle to the next.

And it all comes back to teams with different skills – art, audio, design and programming – coming together, sharing ideas, and creating something completely new. What matters most to potential employers, investors and business partners is what you've delivered.

How many games have you finished? Which companies did you work with? If you want a professional portfolio and professional contacts, we think Abertay is the place to be, right at the heart of Dundee's development community. ■

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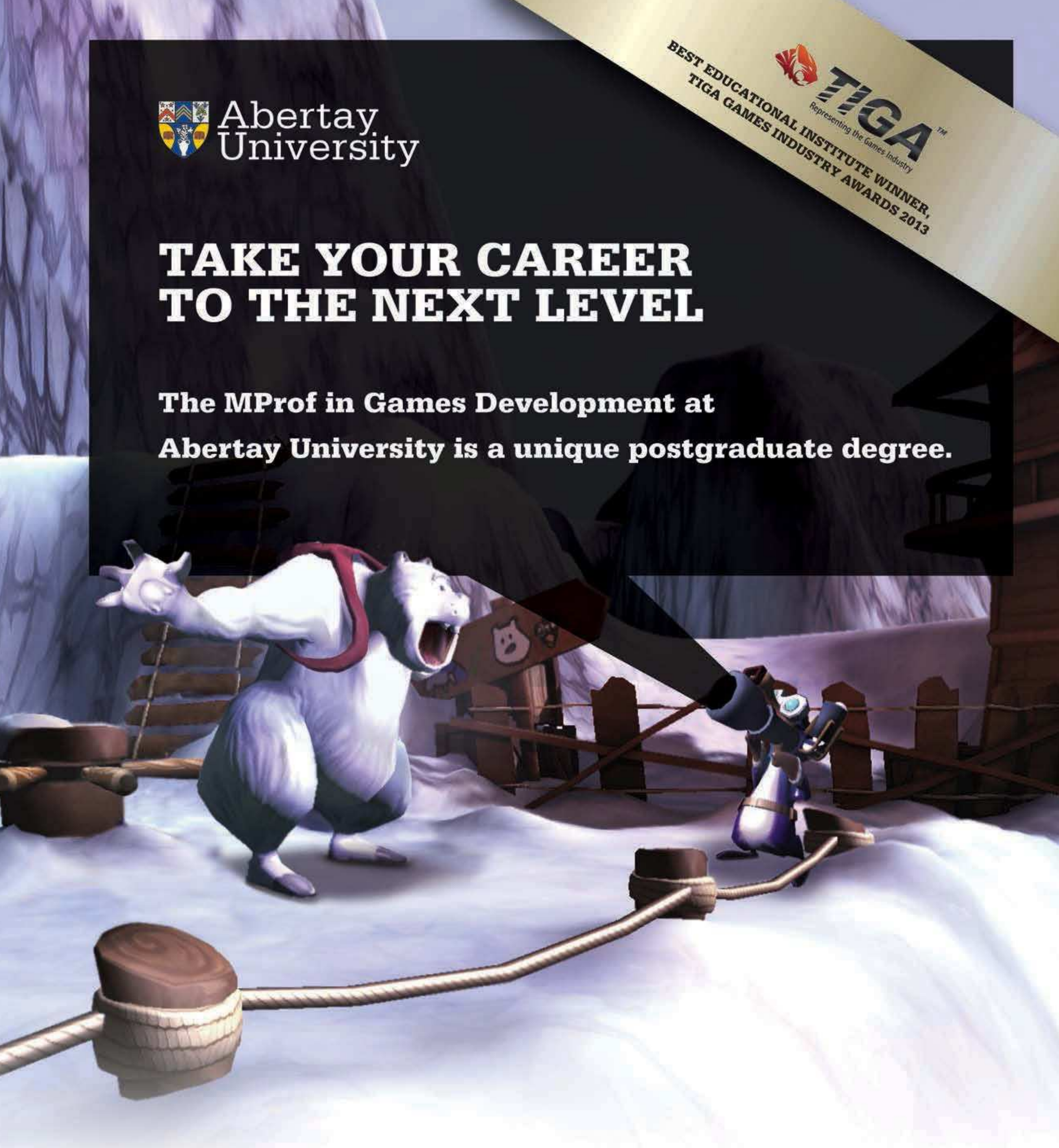

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Immersing in **audio**

Kahl Henderson of Scottish sound experts Savalas on the role audio can play in a game's narrative

Kahl Henderson is the managing director of Glasgow-based sound experts Savalas

Savalas (pictured) has a multi-disciplined team that has worked on the likes of Halo 4: Spartan Ops and Fable Legends

WE'VE ALWAYS BEEN passionate about audio. As we've grown, that's the one thing that's never changed. We try and bring it to everything we do, be it feature films, TV, commercials or video games.

Over the years, our work, particularly in TV and film, has been from local producers. This differs from our experience in video games, where conventional geographical workflow barriers are mostly ignored. This is perhaps because the industry is relatively young and geography isn't seen as an obstacle.

The global talent-pool is embraced and that's made it easier for us to work on projects with international clients. On *Halo 4: Spartan Ops*, it didn't really matter that we were in Glasgow and 343 were in the USA. It's all about a solid workflow, a realistic schedule and regular contact.

Our creative team has always comprised of sound designers and composers, but these disciplines are rarely allowed to cross over. Video games clients look at this multi-disciplined approach as a strength and embrace it. This has seen us, as a company, score, design and mix dozens of game cinematics. As soon as we have creative freedom on all aspects of the soundtrack, everything clicks. Our recent project, the *Fable Legends* announcement trailer, is a perfect example.

The client was keen for us to approach the project as a complete soundtrack, with constant collaboration between our composer, sound designer, mixer and the sound team at Lionhead. This allowed us continual experimentation with foley ideas and the ability to tweak the score and tonal environmental sounds so that when we came to the mix, everything just worked.

TELLING THE STORY

As a company that has a great track record in narrative storytelling, video games always seemed like a natural step for us. Our experience on feature film projects and the tradition of story-focussed soundtracks is something that we love to bring to games.

Our relationship with local studio Axis Animation has been a huge part of our growth in the industry. We've been working together for over a decade and it's a really natural fit. They put a huge amount of trust in us to come up with sonic ideas that contribute to the storytelling, from first concepts through to the final mix.

As a creative relationship develops, projects become incredibly interesting. You develop a storytelling language that's almost unique to you as a group. The more you work together, the less you need to discuss ideas or work through creative briefs. You just intuitively know what everyone will do and how they'll interpret their part of the project.

On *Halo 4: Spartan Ops*, we had the opportunity to expand the *Halo* sonic universe. The audio team at 343 Industries supplied us with some key in-game sound effects, but we were given the freedom to develop these sounds within the context and confines of the franchise. *Halo 4* was a last-gen game and there were the usual bandwidth limitations for in-game audio.

> ***"In the games industry the global talent-pool is embraced and that has made it easier for us to work on projects with international clients."***

Luckily, we were working in a linear environment and had no real technical or creative barriers. Everything that moved, exploded, flew, kicked or punched was spotted with infinite detail.

The vehicles were the biggest challenge. The game engine does a great deal of the work when it comes to adding the physics of movement to in-game sound effects. Our challenge was to create the raw FX for spaceships such as a Pelican or Phantom and iconic vehicles like the Warthog, and then manipulate them realistically within each environment in such a way that the gamer didn't spot the difference. We're very excited at the sonic possibilities of next-gen consoles.

There is plenty of bandwidth for non-linear music and sound, which inevitably leads to more opportunities for experimentation and a better soundtrack. Linear and non-linear techniques are beginning to overlap. Products such as FMOD and Wwise allow sound designers and composers to use the same mixing and design philosophies used in films, but adapted to an interactive environment.

As tech breaks down barriers for working globally and allows for more audio bandwidth in games, we're excited for the future and how we can be a defining part in it. ■

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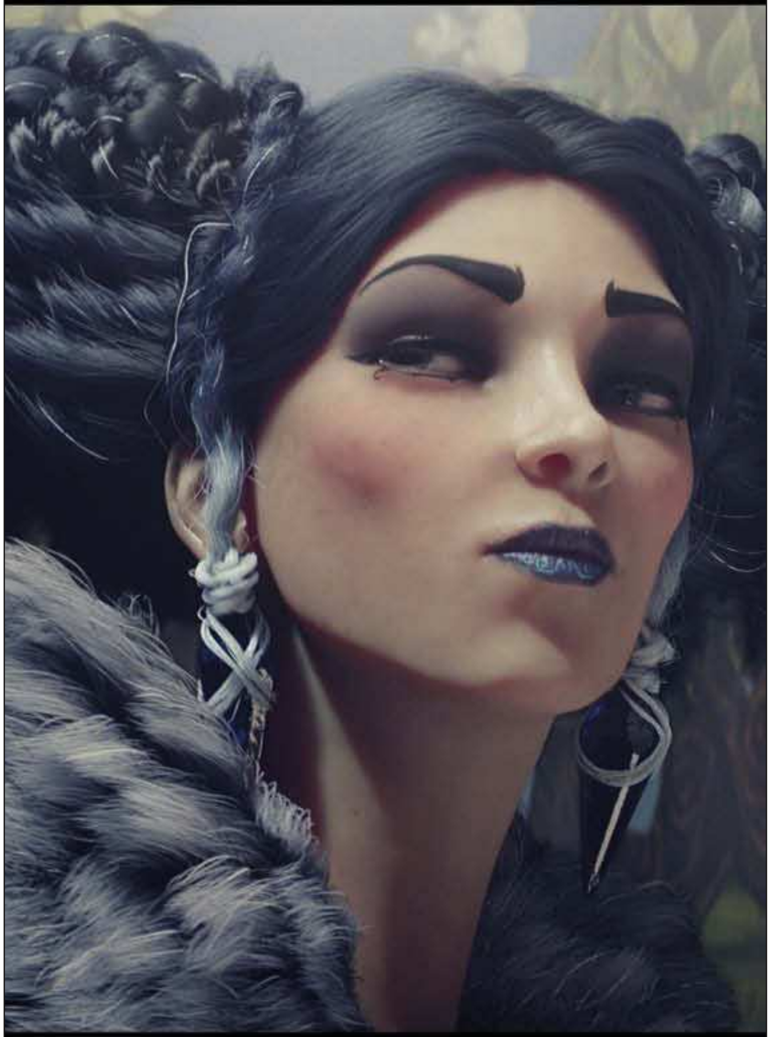

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* some of these statements are not true

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Flying the Scottish **flag**

Axis Animations MD Richard Scott discusses Scotland's international reputation and just what the firm is up to

Richard Scott is managing director of Axis Animations and executive producer of Flaunt Productions

SCOTLAND-BASED FIRMS Axis and Flaunt have spent all their existence working with games clients. Whether it is Axis' triple-A trailers for *Need for Speed: Rivals* and *Halo* or the broader audience work of Flaunt on *Age of Empires Online* and *LEGO Harry Potter*, games are in our blood.

Having an international outlook is something that I think companies in Scotland are very good at. There is something about being Scottish that appeals globally; it might be the accent or the heritage connections that many people around the world feel. Either way it works to our advantage.

The great thing about games and entertainment in general is that there are no real international barriers to reaching audiences, so over time we've seen many Scotland-based companies have a lot of success reaching around the world with their games. It's so exciting to see Scottish titles have such an enviable reputation worldwide, and that's not something you always see a lot of from the more traditional areas of Scottish film or television.

Axis made the decision to focus on North American clients in 2005 and it has been the main driver in our expansion and growth in reputation. We also continued this international focus when we started our sister company, Flaunt Productions.

We have managed to achieve this international growth entirely from our Glasgow base but have added to this with agents, talent managers and partners to allow us to open more doors. 2014 will see us have a dedicated business development person on the ground in Los Angeles and we are really excited to see what the results are from this.

Besides international clients, we are also on a constant search for global talent. While we maintain a powerful in-house team, we often supplement that with external suppliers with specific skills. For example, the surge in casual games has meant a move away from realism to more diverse visual styles. So we've beefed up our relationships with concept artists, designers and illustrators from around the world.

Throughout the process of being more international, we've had great support from our local development agency Scottish Enterprise and Scottish Development International. They have supported our attendance at the top industry events as well as providing support and advice on new markets such as Canada and Japan. They have a great ability to be able to call on Scots around the world for input and connections via their GlobalScot network.

Find Axis Animation at booth 1238

GDC 14

Axis and Flaunt have worked on titles including Fable Legends (top), Age of Empires (above) and Halo (below)

> ***"It's so exciting to see Scottish games have such an enviable reputation and that's not something you always see a lot of from the more traditional areas of Scottish film or television."***

Axis Animations and Flaunt are very lucky to work with these international clients and our goal is always to be involved in the most interesting and creative projects we can find. Although we have this worldwide reach with clients, we always look for local partners in Scotland to work with on these productions. There are a lot of talented companies in Scotland with skills we can use; we love being part of a local community serving the wider entertainment world.

COME TOGETHER

Axis has worked regularly with sound and music specialists Savalas and facial capture and scanning specialists Dimensional Imaging on a range of different projects. It was great working with Savalas on *Halo 4: Spartan Ops* and being able to blow people's minds with the fact that all of that great storytelling and action was made right here in Glasgow.

The other thing that Scotland has in its favour is a strong heritage for storytelling. For us, characters and stories are at the core of everything we do, it is what really engages audiences. All the changes in distribution channels and consumer behaviour puts us in a great place to take advantage of these core skills. Games consoles are becoming broadcast channels, mobiles games are ubiquitous and great stories are being adapted from television to games for a different experience and audience.

Axis and Flaunt will be moving to take advantage of this convergence and we are looking at opportunities in episodic content, interactivity, real-time rendering and co-production partners to tell more stories.

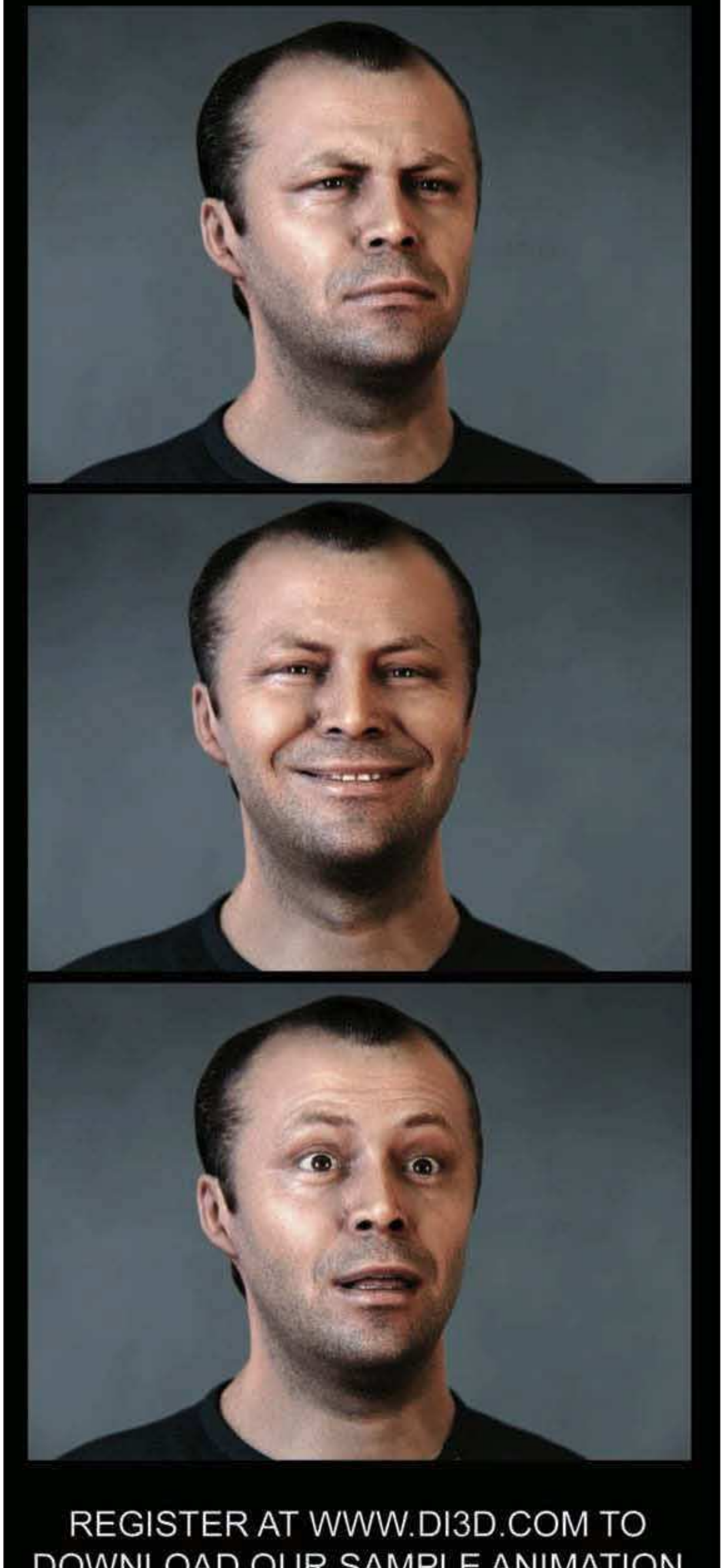
We've just recently set up axisVFX, a boutique visual effects studio specialising in visual effects for television drama and independent film. This is part of a general diversification plan.

We are really excited about how we can apply our experience with the games industry to these new areas, for example using real-time engines to create more realistic pre-visualisations for animation and visual effects.

What's next for Axis & Flaunt? We are moving into our new 8,000 sq ft studio which the whole team is excited about. We'll continue to solidify our relationships with global clients and suppliers, going to all the big industry events. It's an ever-changing time in games, with constant seismic shifts, so you have to stay on top of who's who and what's what – you never know where the next shift will be. ■

www.axisanimation.com

dimensional imaging



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Changing **faces**

Dimensional Imaging CEO Colin Urquhart explains how the Glasgow-based firm is bringing the performance capture techniques of Hollywood to games development

SCOTLAND HAS A worldwide reputation for creativity, reliability and gaming innovation. For a few months in 2013, thanks to the tremendous success of *Grand Theft Auto V*, Scotland was the focus of the global games industry – which helps to highlight other companies in the region that are having an impact on development.

Founded in 2003 and based in Glasgow, Dimensional Imaging supplies high-definition 3D facial image capture and 4D facial performance capture systems, solutions and services. We work with some of the world's leading entertainment companies.

When we started the company, we realised fairly early on that if we wanted to succeed we had to embrace the worldwide marketplace and put ourselves out there as a global company. Although we're based in Scotland, our customer base is truly international, with many customers located in the US, Canada, mainland Europe and beyond. Some of our first entertainment customers were Valve in Seattle and Electronic Arts in Vancouver.

FACIAL LIKENESS CAPTURE

Laser-scanning (or 'Cyber-scanning') was first used for 3D facial capture in the movies in the mid-1980s for films such as *Star Trek IV*, *The Abyss* and *Terminator II*, and was still being used until quite recently. Structured Light Systems also started to be used for 3D facial capture in the early 2000s for movies such as *XXX* and *Die Another Day*. At the same time, these systems also started to be used on a larger scale for facial shape and appearance capture in sport simulation video games – for example, creating the player models in *Major League Baseball*.

In the late 2000s, DI's passive photogrammetry solutions started to be used by Electronic Arts in video games such as *FIFA*, with the improved texture quality derived from using standard DSLR cameras and photographic lighting becoming a key advantage. The instantaneous nature of photogrammetric capture also made expression capture more practical, as Valve discovered when making *Left for Dead 2*.

> ***"The additional resources available in new consoles and engines will allow much more complex rigs that will be able to deliver more realistic performances than ever before."***

Photogrammetric capture is now becoming the default option for facial shape and appearance capture for both VFX (for movies and television) and for video games. Its increasing use has also resulted in a dramatic rise in the number of real life people being cast for "likeness" that can be used as digital doubles in video games.

FACIAL PERFORMANCE CAPTURE

In the mid-2000s Robert Zemekis pioneered the use of marker-based facial performance capture in the movies *Polar Express*, *Beowulf* and *A Christmas Carol*. Markerless facial performance capture was used for the first time on the *Curious Case of Benjamin Button*.

More recently, the facial performance capture of Vincent Cassel for the 2014 movie *La Belle et la Bête* (*Beauty and the Beast*) is one such example of how a 4D facial performance capture software has been used effectively, used to create the beast. Other examples include the BBC's *Atlantis* and *Merlin* – which DI has also worked on.

4D IN THE GAMING SECTOR

We are now starting to see a level of graphic quality and realism in video games rendered in real-time that could previously only be achieved with offline rendering. As a result, we are truly entering an era of convergence, where the quality of both the assets and performances required in games will be much more on a par with those required for television and movies.

In terms of facial animation, the additional resources available in new consoles and engines will allow much more complex rigs that will be able to deliver more realistic animation and convincing performances than ever before. Traditional rig-based facial animation will also begin to be augmented or even replaced by vertex cache driven animation, detail maps and textures.

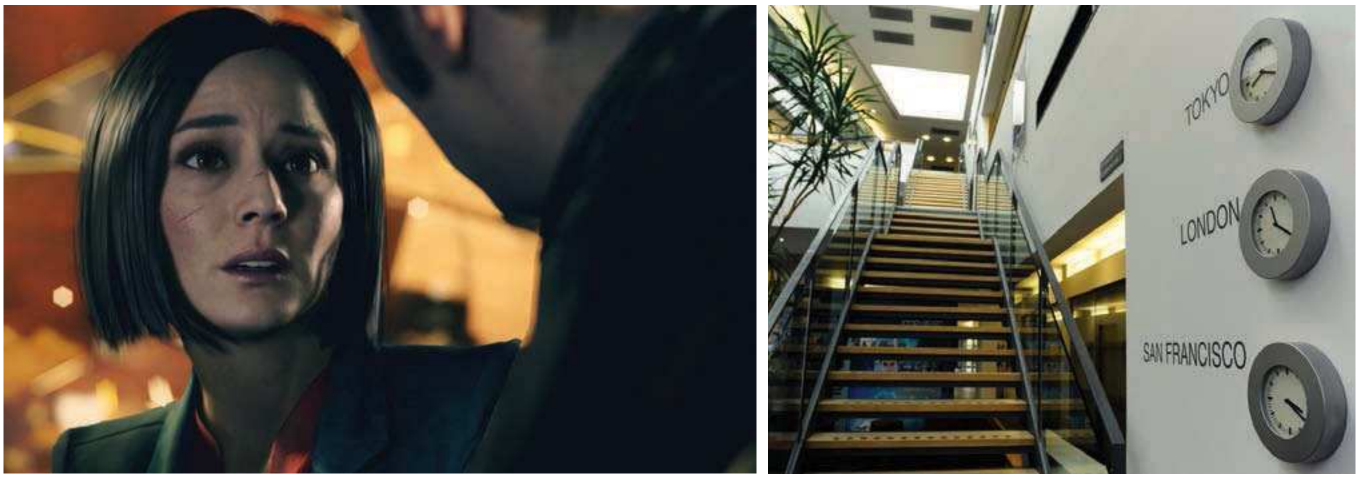
One of the key challenges the industry is facing is the spiraling cost of continually improving the quality of facial animation. How can studios create hours of facial animation at ever higher levels of quality and realism within reasonable budgets? I think the answer is in technology like ours to accurately capture the performance from real life talent, as demonstrated by Remedy for *Quantum Break*.

DI is in the process of developing a head-mounted version of our DI4D capture system, which will deliver the high fidelity of capture the company is known for, but also allow the acting talent to perform freely.

www.di3d.com

Colin Urquhart is CEO of facial image performance capture experts Dimensional Imaging

Remedy's Quantum Break (below) makes use of DI4D to realise its characters' striking facial expressions. The tech was developed at Dimensional Imaging's studio (below right)



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Power Up: The Beautiful Game

Microsoft and supporting games industry partners are working together to help encourage the growth in the UK games industry which seeks to recognise and help game studios and developers of all sizes. As part of this ambition we have developed a competition which seeks to provide new Store opportunities for your games as well as helping you to get your titles discovered and downloaded.

Power Up: The Beautiful Game competition commences from 3rd March until 20th June 2014. The competition is open to all UK games developers who port and publish their new or existing games titles to Microsoft Windows 8 and/or Windows Phone Stores. Each game entered will receive points based on a wide range of game experiences, as well as recognising the quality of the game, any marketing activities, plus the number of downloads the games get on the Windows or Windows Phone Stores. The top 20 games with the most points secured will win great prizes for their developers but all entrants have an opportunity for their games to be discovered and downloaded by 100,000's to millions of players.

This is a wonderful opportunity to showcase your game(s) to a much wider audience and be generously rewarded.

Boost your downloads

We want to ensure that your game is discovered and downloaded. The quality of the game does not always guarantee success. As such we have partnered with the Chartered Institute of Marketing (CIM) to provide some guidance on good practice apps marketing. Visit the competition website for more details.

Points are awarded for:

- Game experience – quality of audio execution, visual execution and gameplay
- Downloads per store – we will count the downloads in both the Windows and Windows Phone stores

Prizes galore!

There is a fantastic range of valuable prizes to be won including: Unity Pro seats, Nokia Lumia 1020s and 520s, a Chartered Institute of Marketing Apps Marketing course, a chance to attend a special mentoring event with selected Board members from TIGA and UKIE, and an awards ceremony at Dolby's prestigious theatre in Soho Square.

Competition

Microsoft

Getting started

To find out more and to enter the game, go to **www.beautifulgamecomp.com** complete the 'Registration Form' and follow the instructions – it's as simple as that.

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TIGA is very pleased to be involved...it's particularly pleasing to see Microsoft going above and beyond to encourage UK games businesses. If UK developers are to compete on the global stage, we must continue to professionalise our industry. We hope as many UK developers as possible take part...and wish all entrants the very best of luck.

Dr. Richard Wilson
CEO, TIGA

ukie

We are pleased to help support game developers in the UK. This competition is a great chance for SMEs to be mentored by high profile industry experts, to get practical guidance and advice to help their businesses develop and grow, and to help them reach new players.

Dr Jo Twist
CEO of UKIE

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Unity is happy to support The Beautiful Game contest, a great opportunity for developers to tackle the various aspects of successful game development – visual style, audio, gameplay and marketing strategy.

Andy Brammall
Regional Sales Director, Unity Technologies

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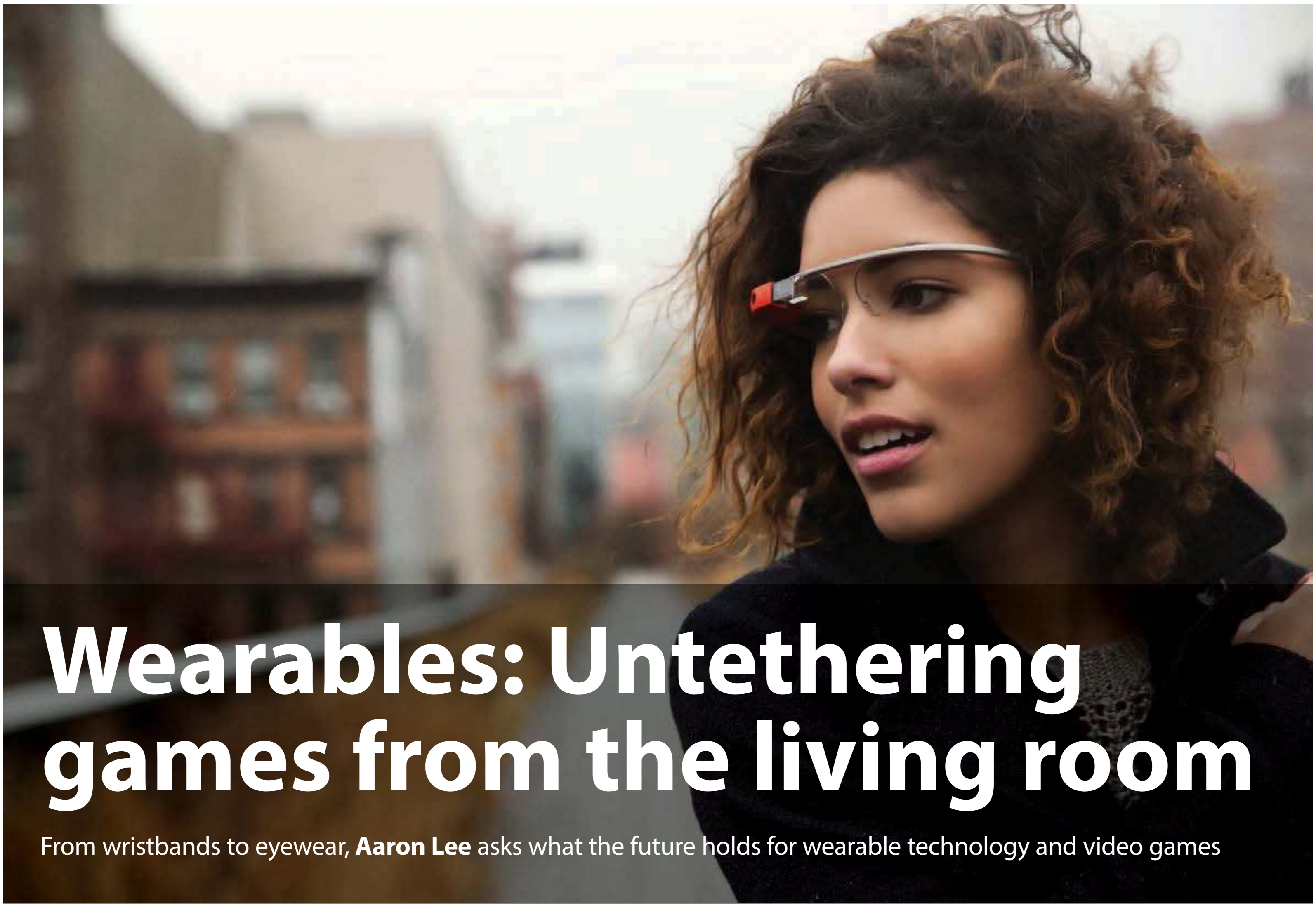


Wearables: Untethering games from the living room

From wristbands to eyewear, **Aaron Lee** asks what the future holds for wearable technology and video games

David Maidment of ARM (top), Anthony Mullen of Forrester (bottom)

AT E3 FIVE years ago, Nintendo CEO Satoru Iwata took to the stage to tease a prototype piece of hardware it was working on called the Wii Vitality Sensor – a white plastic peg intended for clipping to your index finger with a wire protruding from it that would literally connect man and machine.

"Traditionally, video games have been developed to give an increased sense of excitement or stimulation. But it may not be long before games are also used to let people unwind or even make it easier to fall asleep," Iwata said at the time, summing up almost the philosophy the company has held, even unpopularly, that gaming is about more than mere entertainment.

Still, to call the Vitality Sensor "unflattering" would be putting it nicely. But it represents an early foray into wearable computing, which is, so the pundits say, the next revolution in interactivity. Of course, that's what they said about 3D TV, and we all know what happened there. If wearable tech really is the future, what part will games play and what will it mean for the developers themselves?

Below: Google Glass sharpens its aesthetic appeal by adding shades

Early signs do in fact suggest there is a genuine appetite for wearable tech from both consumers and developers.

TECH UNTETHERED

Eric Migicovsky's crowdfunded Pebble smartwatch broke Kickstarter records, raising over $10 million in 2012. Though we've not heard the pre-order numbers for Google Glass, developer interest has been high, with studios such as AMA Design (see *Develop #143*) throwing their full R&D might behind the eyewear. Meanwhile, Oculus Rift has singlehandedly spawned a revival in VR tech and prompted Valve, Frontier, CCP and host of others to start work on VR-enabled games.

"All wearable devices have one common theme: always-on sensors," David Maidment, mobile segment manager at ARM, tells *Develop*. "Today, you will find motion sensors in fitness bands and watches as well as advanced measurements in medical applications. The sensors can, in some cases, be used for multiple applications. For example, a motion sensor can be used to track fitness, but the same data can also be used for gamification, such as VR gaming to play out game scenarios through your day-to-day living."

The ability to gamify exercise is one of the chief selling points of the Nabu Smartband from peripheral manufacturer Razer. In 24 hours, over 10,000 developers signed up to make apps for the device – an indicator of the potential creators see in hardware of this kind. Nabu acts like a discreet pager for the connected era, apparently built for those "moments when pulling out your smartphone is just not the right call". The two inverted OLED screens on this simple bangle can display caller IDs, text messages and other notifications. Gesture control meanwhile will allow the wearer to dismiss messages with the shake of their wrist or activate sleep mode with the click of their fingers. All very promising and seemingly ripe for a series of *Zombies, Run!*-style gaming apps to be bundled with Nabu and its equivalents in the fitness market.

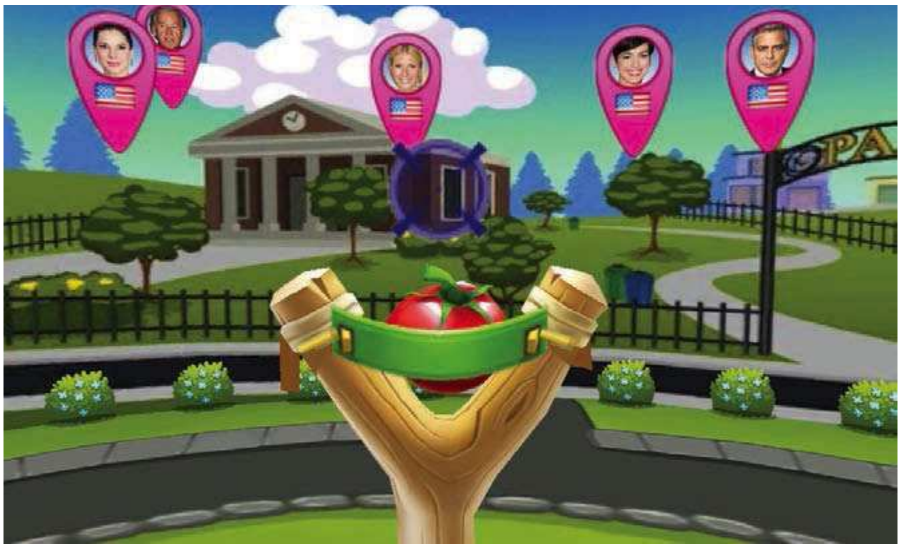
Anthony Mullen, senior analyst at research firm Forrester, says wearables are the opportunity to "untether games from the living room", which is the holy grail of today's interim systems, such as PS4-to-Vita cross-play and Kinect-style motion control.

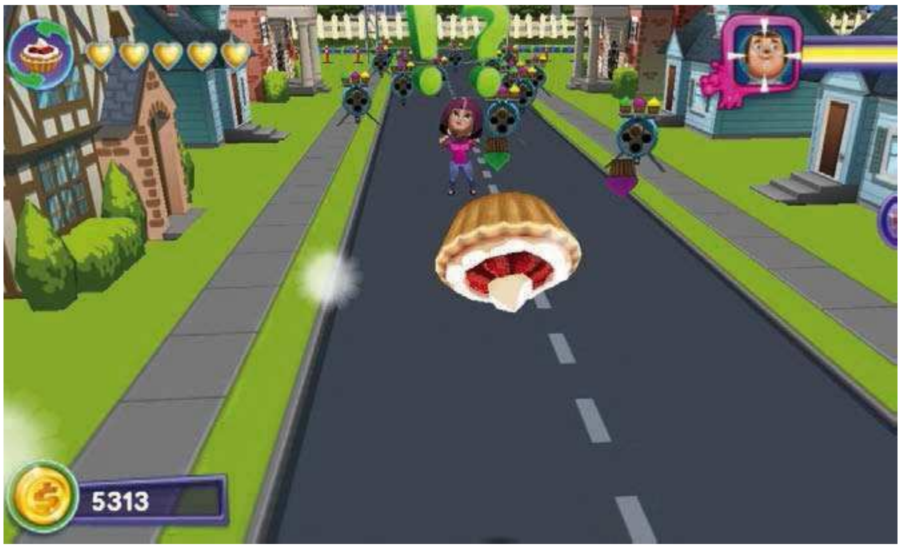
Real-time location data, the ability to read your heart rate and respond to your immediate environment are what this tech is bringing to the wider consumer electronics space, and it will impact gaming. But as Mullen points out: "The issue is that games need to address a mass market. Most gaming companies are looking at wearables as something to experiment with and do research on – they aren't pivoting the future of the company on it."

SNACK-SIZED ENTERTAINMENT

One daring team that is putting its faith in games for wearable tech is Mind Pirate. In fact, co-founder and CEO Shawn Hardin says: "It's our entire business".

Mind Pirate has created Callisto, the first platform and toolset of its kind, built to enable games developers to create 'snack apps' for





Top-to-bottom: James McDavid of Forrester, Shawn Hardin of Mind Pirate and Steven Holmes of Intel

Left: Mind Pirate's Global Food Fight will be one of the first titles available for Google Glass when it launches this year

wearables. *Global Food Fight* is its acid test for the platform and is set to launch simultaneously on Google Glass and iOS by late March.

"On wearable devices the sessions are much shorter and more frequent," says Hardin, commenting on what wearable tech will mean for game design. "Smartphones are almost always on hand, so people tend to use them multiple times a day but for small amounts of time. With wearable computing devices, user engagement is going from three minutes to 30 seconds, and from 20-to-50 times a day on a tablet or smartphone to 150-to-200 times a day on wearable devices. The increase of frequency and decrease of duration introduces many design implications that we call microengagements, or 'snack app' opportunities."

Hardin goes on to say that cloud computing will be critical in order for wearable tech to maintain the pick-up-and-play immediacy that consumers expect across their devices, so "you can have a device-appropriate experience".

The development of new game-like uses is something he is also pleased to see, praising Reebok for its recently announced Checklight, a head-mounted impact sensor intended to reduce the number of concussions in contact sports (*see more in 'Run Dem Creds'*). "It's great to see a traditional shoe company not only innovating in the tech space, but also help save people's lives," Hardin added.

> ***Most gaming firms are looking at wearables as something to experiment with – they aren't pivoting their future on it.***
>
> Anthony Mullen, Forrester

OPEN FOR INNOVATION

Save for vague hints, platform holders such as Microsoft have so far kept shtoom on the subject of wearable tech for games. Electronics giant Samsung released its Galaxy Gear last year to a muted response, and we're still yet to see Apple unveil its long-rumoured iWatch. In the infancy of this new ecosystem, the prevailing attitude is one of optimism.

"We're seeing a very heterogeneous and diverse marketplace emerging with numerous hardware and software configurations and a number of operating systems. I don't think there's going to be a 'winner takes all' world for many, many years in wearable," offers Hardin.

Maidment of ARM expects the smartphone players to have a large influence, but he also believes there will be a "much larger role for the innovator", and the fact that the microprocessor manufacturer is currently providing components for more than 80 wearable products is evidence.

Intel, too, sees "limitless opportunities for games" with wearables – having offered an early glimpse of its vision at this year's CES. Its VP of smart devices innovation, Steven Holmes, tells *Develop*: "The market is wide open for growth and evolution. Many wearables will be much more personal, and closer to apparel or jewellery than to today's technology-driven products. And there will be a stronger desire for them to be expressive and interchangeable."

Forrester's Mullen predicts that an app ecosystem, where smartphones act as a host device for multiple experiences, is likely to develop: "So, for example, my wrist device can morph from being a tool useful to play a lightsaber game and then, with a change of context, it can become my music festival 'buddy', telling me what's on or where the nearest free space for a tent is.

"In the short term, my hope is that the fashion industry begins to take a bit more notice of wearables to raise their profile from geeky 'bolt-on' to a desirable style item."

HERE TO STAY

Nintendo's Vitality Sensor was a novel idea, but far too early for the technology of its day. That's the real issue facing the new wave of wearable tech and the developers looking to make use of it. As Mind Pirate's Hardin says, apps can't easily be ported – unlike traditional games – they must be purpose-built. Aesthetically and practically, the hardware of tomorrow will need to shape up to in order meet consumers' expectations.

"There is clearly a lot of experimentation going on in the wearable space right now and some of the products and ideas that are capturing the imagination today won't be around five years from now," says Intel's Holmes. "But wearables are here to stay."

The gaming possibilities that this new breed of tech enables have barely been scratched. In our increasingly data-rich, data-cluttered world, they may take our symbioses with technology to a level smartphones could only hope to achieve.

"Wearables allow consumers to be always connected and inputting data while they get on with other things," concludes Mullen. "Ultimately, they will improve quality of life and save our thumbs from seizing up completely due to smartphone usage." ■

RUN DEM CREDS

GIVEN THE SUCCESS of *Zombies, Run!* and similar interactive pedometers or data-collection tools, one might suspect that sports brands would be sprinting a mile to get games companies involved with their wearables, such as the Nike+ FuelBand.

Forrester research analyst James McDavid says that sports firm will engage with the games industry in time: "In professional sports today, one of the major trends is telemetry, or real-time performance data. From the Premier League to the Tour de France, top-level athletes are now using data collection to analyse and understand their performances in order to refine training and optimise playing strategies.

"Brands like Nike and Reebok are seeing these trends in sports and are working to bring that to the mass market – gamification is the Trojan Horse for them to do so."

Jade Lee - Accept friend?

Below: Razer's Nabu Smartband aims to give users info on their game progress while also acting as a pager-like device

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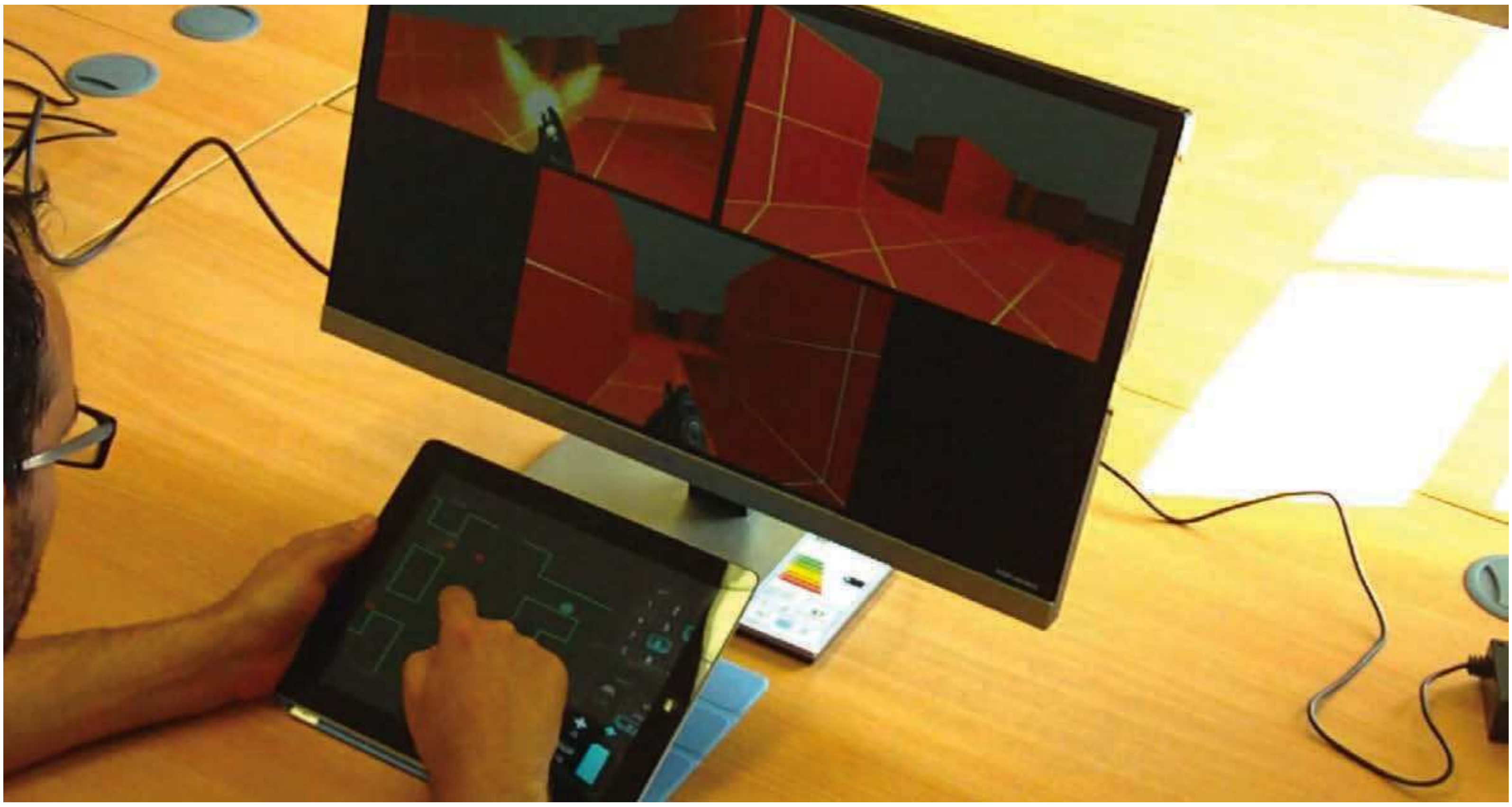

A game of **two halves**

Opposable's second screen game Salvaged has already won a £25,000 development competition, and it's still being prototyped. While many studios currently shun the tech, **Will Freeman** visits a team where second screen matters

Above: Bristol-based Opposable Games is experimenting with second screen gaming through its new title, Salvaged

Below: Opposable's James Parker and Ben Trewhella

WHEN UK INDIE Opposable Games released *Clockwork Racers* in the closing months of 2012, they knew they were taking some of the first steps into a new frontier for games. The playful racer was a multiscreen, peer-to-peer release at a time when meaningful second screen gaming was the reserve of a handful of apps, and little more than a near-future trend and favourite talking point of industry conference coffee breaks.

The studio wasn't expecting anything like record-breaking sales as they tentatively explored what they could achieve across multiple devices. As such, the fact that over a year later *Clockwork Racers* is still being played by relatively high numbers has given Opposable reason to be optimistic that there is a future in second screen game design.

As it stands today, second screen remains a fledgling gaming form, yet to inch its way past any significant tipping point. A few triple-A games have, of course, made some headway with polished companion apps, but for now, if there is to be a revolution where true master-to-client-based second screen games prosper, it is presently a movement without a leader.

THE REVOLUTION WILL BE TELEVISED TWICE

Opposable Games might not be positioning themselves as figureheads of a industry transformation, but the team are forging a reputation as champions of the second screen, and they certainly seem keen to take other developers along with them.

"There hasn't been a game yet that has ultimately proved the worth of second screen, and that needs to happen for more people to be interested, both in terms of players and developers," says Opposable MD Ben Trewhella.

For Opposable, that game isn't *Clockwork Racers*, but *Salvaged*; a squad-based action-RTS still undergoing much prototyping and experimentation. Although little is set in stone, the game sees players control a top-down RTS on devices like tablets, which dictates the action in a 3D first-person battle on a larger mother screen. *Salvaged*'s setting is within core sci-fi, with players working for a futuristic corporation racing to claim black boxes from the wrecks of fallen battle cruisers.

And it's own story really starts with the IC Tomorrow Digital Innovation development contest in 2013, where the prototype game and Opposable's own OneTouchConnect technology beat 100 other titles to win the SCEE-backed second screen category. The triumph secured the game's budget a £25,000 boon, and the team input from mentors, as well as promotional and testing support.

> ***"There hasn't been a game yet that has ultimately proved the worth of second screen, and that needs to happen."***
> Ben Trewhella, Opposable

That win has given Opposable a significant position on the starting grid in the race for second screen, but they are not a company looking to monopolise the market.

OneTouchConnect is available as a Unity Asset Store extension, and Opposable hopes the tool, which can be used for peer-to-peer or master-to-client multi-device, multi-OS games, can contribute to building an ecosystem of second screen developers.

They are also open to ideas such as hosting second screen game jams at their Bristol Games Hub home, and recognise that making the form matter will require more than one developer, out on its own to claim the riches, if it is generate interest. ▶

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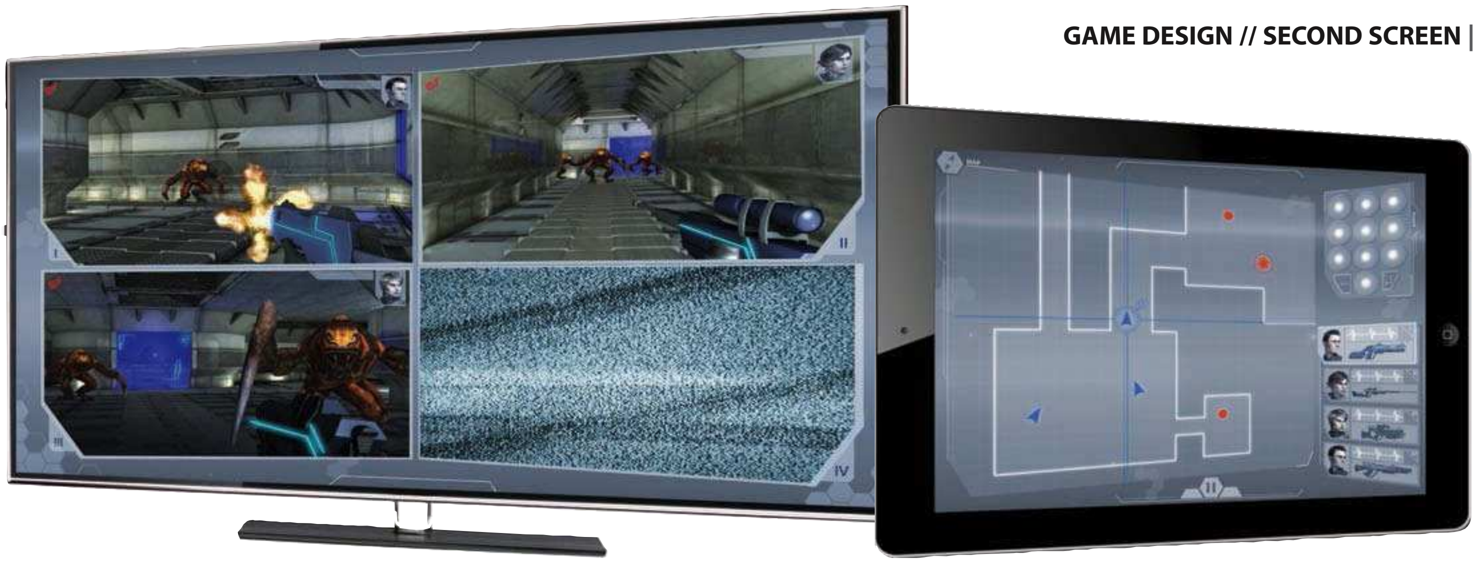


Above: A gameplay mock-up of Salvaged, with a tablet displaying a map, and the main game on the HD TV beside it

Below: Character concept art from Salvaged

Below right: Opposable's 'imagined' control room, an image that its second screen combination aims to evoke in players

Of course, the real challenge isn't the technology or the market, but making a game that is entertaining on – and more importantly warrants – a second screen setup. This is the issue Opposable is out to answer with the design on *Salvaged*.

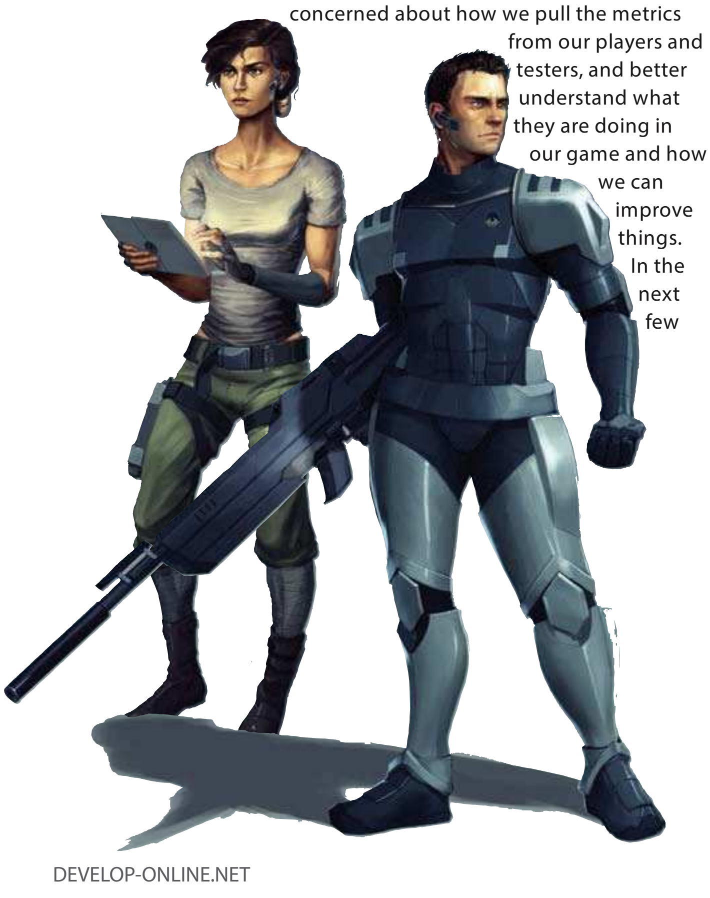
"A huge part of it comes down to a continual testing process," offers Trewhella. "To a degree, it is the same as the development process of a normal single-screen game. There's always a certain amount of information the player needs, and it's always important to get the amount and presentation right. When a player needs what information is a very important consideration."

DESIGNING FOR TWO

The challenge in the opportunity of second screen is how you present that information to the player, continues Trewhella.

"You have to keep asking how you make a virtue of the fact that a player has to keep changing viewpoint between screens to access that information. Or you can focus on the challenge to the player that they have to change screens. It's hard to get right, so we've had to give it a lot of attention."

Opposable's design director James Parker adds: "With my background being code I'm concerned about how we pull the metrics from our players and testers, and better understand what they are doing in our game and how we can improve things. In the next few months we're going through a process of finding out what is unique about our game, what works, and what players actually enjoy; that will lead what the game becomes on a broad spectrum, where at one end it's an RTS and at the other it's a squad-based shooter or something like *Cannon Fodder*. We have to find where a second screen game fits best on that spectrum, so we're doing things carefully."



What's more, there's a challenge in communicating what *Salvaged* actually is to players, and potentially trouble bestowing the game with those foundations of success, immediacy and accessibility.

> ***"There's more than one screen in most homes now; to take advantage of that we need to support all the platforms we can."***
>
> Ben Trewhella, Opposable

Fortunately, a glance at a YouTube video or a few moments with the game in your hands, and it is fairly apparent how *Salvaged* works. In part, that's because of it's current melding of two well-known genres; the FPS and the RTS. Which begs the question; why put it on more than a single screen at all?

"While we can sell it on being this awesome new way of playing games, we do want it to be popular because it is a good game regardless of how many screens there are," explains Trewhella. "Second screen shouldn't be the reason a game exists; it's a way it can exist. The game needs to be compelling regardless. We just have to make sure the nature of the interface makes it more immersive, and that's why we're doing so much work at this stage. We want to deliver a game that needs to be second screen."

There's also the matter of the reality of the market out there. It easy, when employed in a field like the games industry, to assume everybody has at least one laptop, tablet and smartphone when they leave the house. But is that really the case for the swathes of consumers out there for whom games aren't a way to pay the rent?

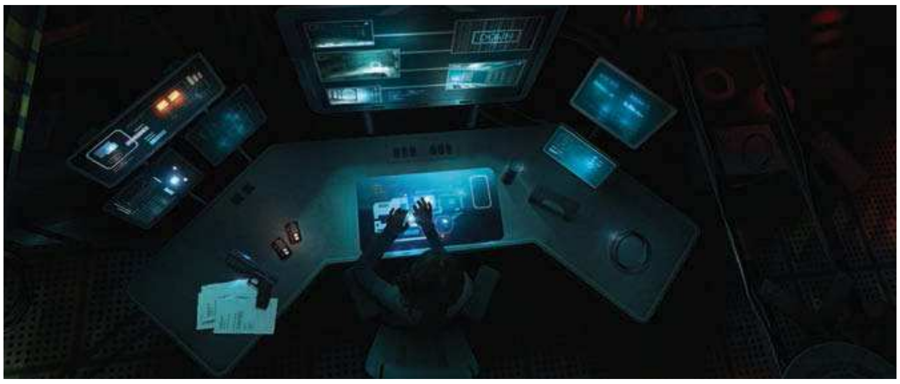
"When we first started doing this two years ago, and we put up *Clockwork Racers*, the number of screens in homes was a concern, but it still did better than we expected," says Trewhella. "And now times have changed, and most homes have multiple screens. That means we have to make our game work on as many different platforms as possible. That's really important for letting us make the audience as wide as possible. There's more than one screen in most homes now; to take advantage of that we need to support all the platforms we can."

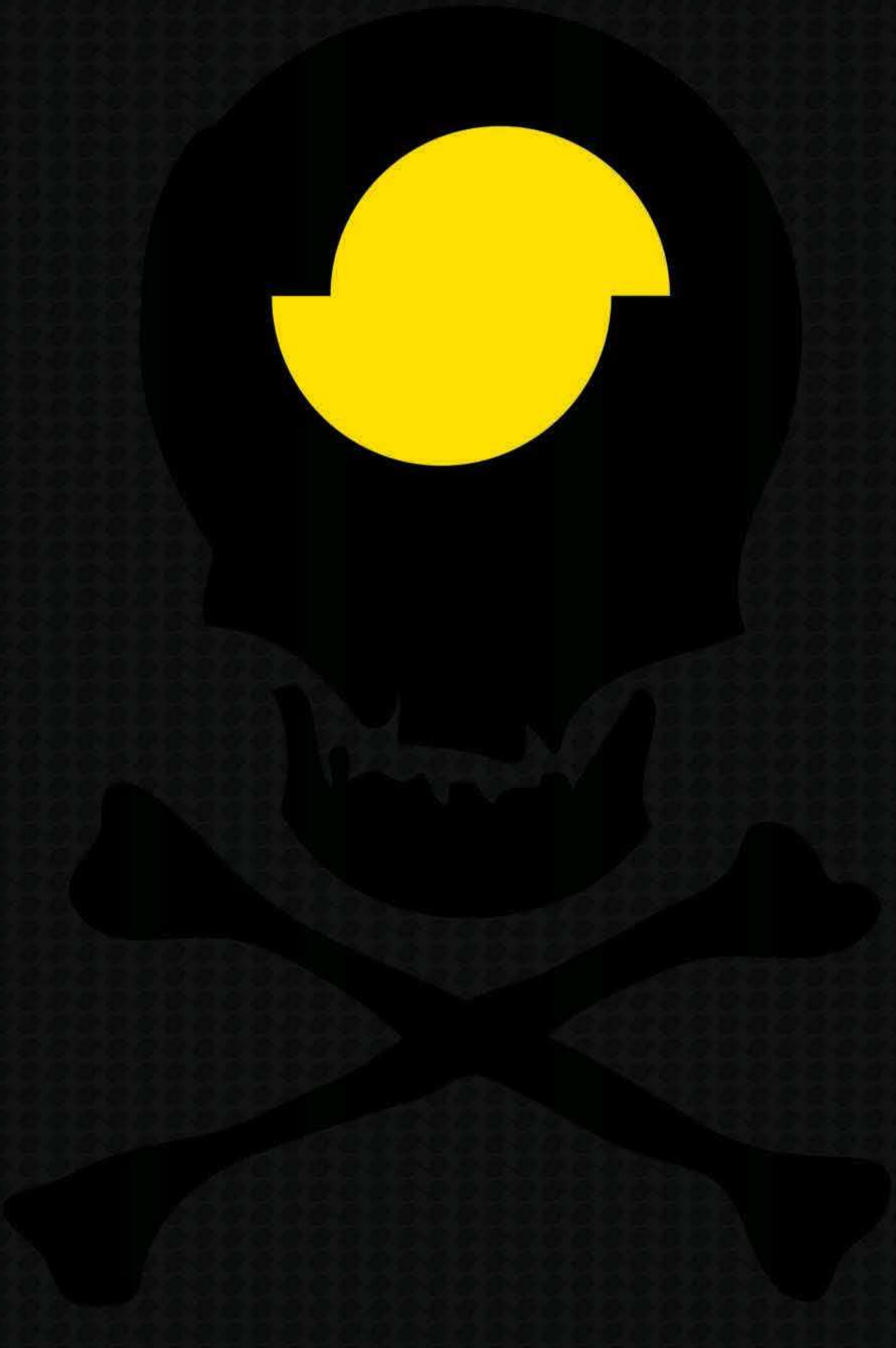
SCREENING THE AUDIENCE

On that note, Opposable must return to their work; currently exploring how best to monitor and read players' eye movements to see how *Salavaged* is played. But they do have some advice for other studios embarking on second screen projects.

"Focus management is really important," suggests Trewhella. "You have to think very carefully about where the player will focus, and how that focus will move between screens. A player needs time to move between the two screens; that's incredibly important to consider as you design your game."

Parker concludes: "And be sure you're not involved in second screen as a box ticking exercise. Be really sure you know why you're going for second screen. If you want your game to be successful, you need to know why you've gone with taking it beyond one screen. And be sure to think about combining the best bits of each platform, rather than the worst." ■





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MOVERS AND SHAKERS

This month: Mind Candy, Dovetail, King, Engine Room Games and Carbon Digital

MOSHI MONSTERS DEV HIRES NEW CTO

MIND CANDY ■ *Moshi Monsters*-maker Mind Candy has appointed **JEFF REYNAR** as its new chief technology officer.

Reynar's appointment follows the hiring of **CHIA CHIN LEE** as chief product officer as the studio pursues its strategy to expand into the mobile games market.

Reynar is responsible for the company's technology strategy and spearheading all aspects of development and infrastructure.

Lee is responsible for overseeing the growth and management of the London-based developer's digital entertainment business across multiple platforms through strategy and creative direction.

Before joining Mind Candy, Reynar worked at a range of companies, including Microsoft and AOL, before founding his own start-up. With a PhD in Computer Science, he worked at Google as a product manager before switching to engineering, where he led teams working on the UI for Google Search.

With extensive experience in the digital world, Lee was the CEO and co-founder of Offbeat Creations, which created free-to-play games. Lee has also worked with Disney, leading collaborations between Marvel and Playdom to create *Marvel: Avengers Alliance*.

Commenting on both Reynar and Lee's appointments, Mind Candy CEO Michael Acton Smith said: "Mobile is a core focus for Mind Candy and both Jeff and Chia Chin have extensive experience in this area. Their passion for the technology and entertainment industry is contagious. We're thrilled to have them both on board."

Mind Candy's new CTO Jeff Reynar (above)

KING ■ King has hired **NICKI SHEARD,** BBC Radio's former head of marketing, as its new VP of brand marketing.

Nicki Sheard will be responsible for driving the growth of the *Candy Crush* developer's new and existing titles.

"We're delighted to welcome Nicki to the King team," said King chief marketing officer Alex Dale. "She brings with her an unrivalled track record in growing brands and will play a vital role in building on our already successful games franchises."

Sheard added: "I am extremely excited to be joining King. It's a refreshing and innovative company buzzing with talent and creativity, and I am looking forward to helping them develop and extend their brands and grow their business."

DOVETAIL GAMES ■ UK developer Dovetail Games has appointed former Criterion dev **CHRIS ROBERTS** as its new creative director.

Roberts has been involved in the industry for 17 years and has worked on titles including *Need for Speed: Rivals*, as well as the *Harry Potter* and *Burnout* series.

"The environment that Dovetail has created in its Kent-based studio is a really creative and inspiring one," Roberts told our sister magazine, *MCV*.

"There is a very talented team there which is committed to producing high quality simulation products and there's a lot of excitement as the studio starts to move into new areas and develop for new platforms. It's something I'm delighted to become a part of."

ENGINE ROOM GAMES ■ **SAM BICKLEY** has joined Engine Room as a new QA test engineer.

Working with the existing team at its Stratford-upon-Avon office, Bickley will to help bring the Unity game engine to Sony consoles.

Bickley has been working in the games industry for over four years, having previously held roles at Gusto Games as an animator and mobile developer Tactile Fusion as an artist. During this time, he has worked on titles, such as *Stuntman Eddie*, *I Spy*, and *DJ Hero 2* for Wii.

Engine Room' director Alex McLean commented: "We're delighted that Sam has joined us and look forward to more key hires as we look to further increase the headcount here at ERG."

CARBON DIGITAL ■ VFX and animation agency Carbon Digital has hired **IAN RICHARDSON** as its new business development director.

Richardson will head up its newly launched games and toy division. This dedicated department will deliver high-end CGI work for game trailers and commercials.

He brings with him 30 years experience in sales operations, most notably as the previous founder and MD of Vector Oem Content – Europe's largest software provider to the likes of Intel, Nvidia, Dell and DSGi.

"Carbon Digital has a very talented team with a brilliant work ethic and I am looking forward to assisting their expansion with the newly created games and toy division," he said.

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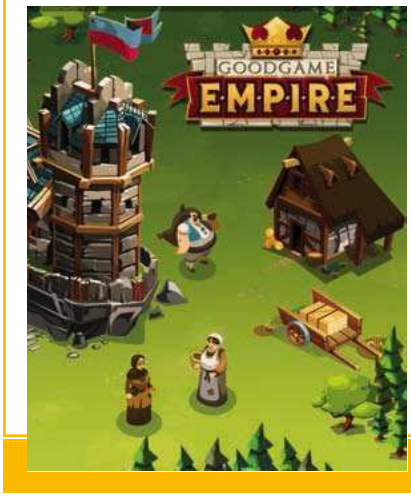

■ "We were always passionate about entrepreneurship and gaming," says Dr Christian Wawrzinek, COO and co-founder of **Goodgame Studios**.

"In 2009 we started to develop games, and half a year later we released our first game and established the company as a brand. Today, we reach a user base of 180m registered users worldwide."

■ The studio focuses on developing free-to-play mobile and browser games, such as *Goodgame Empire*.

■ Out of 3,000 monthly applications, the studio hires less than two per cent as its "looking for only the best talent to strengthen our team".

■ "All of our employees have a key role to play. We wouldn't be where we are today without such a professional team," adds Wawrzinek.

■ Goodgame currently has a headcount of 700, with around 500 open positions still to fill. Email: **jobs@goodgamestudios.com**.

■ By 2020, the Hamburg dev wants to be among the world's top 20 games companies by revenue, surpassing today's major publishers.

Hamburg-based Goodgame houses 700 staff

www.goodgamestudios.com

RECRUITER **HOT** SEAT

Crytak's Nottingham studio is hiring. Janine Prince explains why you should make the Ryse-maker your next career stop

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BIO
Name: Janine Prince
Title: Talent Manager
Developer: Crytek UK
www.crytek.com/career

> ***"We make the tools and technology that underlies some of the best games out there."***
> Janine Prince, Crytek UK

What differentiates Crytek UK from other developers?
Crytek UK is a leading developer of CryEngine technology, pushing the boundaries of what is technically possible and therefore the overall gamer experience. Not only are we market leaders with our tools and technology but we offer great opportunities for our employees to continually develop their skill sets through ongoing peer-supported learning. We make the tools and technology that underlies some of the best games out there and that many other studios rely on, as well as developing great games ourselves.

How many staff are you currently looking to take on?
We are currently expanding here in Nottingham and as a result we have 25 vacancies to fill this year.

Predominately, the vacancies are for game and R&D programmers, with some openings in other disciplines. For all of our current vacancies please visit our website: **www.crytek.com**.

We are a very open-minded company and feel the studio is enriched by as broad a spectrum of people and skills as possible. We have very high standards but are happy to consider a broad range of previous experience. We are currently looking not only for those with previous industry experience but searching for talented people looking for their first steps into video games. We are also looking to launch our own graduate/internship program in the near future – watch this space.

What perks are available to those working at the studio?
By working for Crytek UK, you not only get the opportunity to work with an amazingly talented and lively team, in a newly built, state-of-the-art studio in the centre of Nottingham; but also benefit from our company benefits package which includes gym membership, cycle to work scheme, company contributed pension scheme, childcare vouchers, along with an employee assistance programme. Each year we allocate a Learning and Development budget per discipline to continue to develop the skills of our employees including the opportunity to attend industry conventions. And, I nearly forgot, the well-renowned Pastry Friday we celebrate here weekly, and the newly introduced Breakfast Club Mondays.

What should aspiring devs do with their CV to get to an interview?
We actively encourage candidates to apply via our website. This is where our vacancies are published first. They need to take the application as an opportunity to show off what they're capable of remembering to include samples of their work, links to online portfolios or demos, but most of all to demonstrate their passion to make triple-A games. Their CV should be up-to-date and relevant to the role they're applying for. Keep the information succinct, as long, rambling CVs can be a challenge to review. We receive lots of applications so candidates need to make sure that they stand out.

Who is the best interviewee you have ever had and how did they impress you?
The people that impress me are those who are able to display strong self-motivation and ambition. This is often accomplished by demonstrating how they have developed their own projects in their spare time. People who can show they understand the complexities of making a game in a small group and overcome significant technical challenges. It's always nice to speak to someone who isn't afraid of alternative solutions to previously solved problems, showing creativity and tenacity in finding an optimum solution to a challenge.

And who was the worst?
I can't name and shame the individual, but they arrived over an hour late for the interview, didn't apologise for being late then showed no enthusiasm throughout the whole process. They just wanted a job in the industry with no particular desire to work for Crytek specifically or on one of our games. I must add that they had applied direct for the role themselves and accepted the invite to interview, but obviously felt no need to demonstrate a compelling reason for us to employ them.

What advice would you give jobseekers for a positive interview?
Be prepared. There is nothing worse than sitting down in front of a candidate and they haven't done any research on Crytek, its projects or its technological achievements. Candidates need to relax and be themselves. Try to be honest about their knowledge and experience. As experienced interviewers, we can always tell when someone doesn't really understand a concept. It is always advisable to show us what you're enthusiastic about and can do. By doing this it will generally assist the flow of the overall interview.

If your studio has recruited talent internationally, what was the process like for you and for the applicant?
Unfortunately, until recently we have been limited in our ability to recruit internationally. This was due to restrictions in place with the UK Border Agency. However, we are now seeking talented programmers globally and are prepared to do what it takes to hire the right candidates. We will ensure the process is as smooth as can be offering both financial and logistical support.

GET THAT JOB

Development specialists offer advice on how you can bag that career leap

THIS MONTH: TECHNICAL DIRECTOR

CLIMAX'S TECHNICAL DIRECTOR James Sharman discusses his role in programming.

What is your job role?
I'm the technical director of Climax Studios, which means that I run the programming department. At a high level, I am responsible for hiring coders, managing their careers and guiding the technical direction of the studio. Day-to-day, it's my job to ensure the individual projects have the right code team and the right support to deliver great games.

How would someone become a technical director?
As you would expect, I come from a programming background. I've been in the games industry for about 19 years and most of that as a programmer. Since it's a senior role there aren't really any hard and fast rules. Most studios will either promote internally or look for a candidate with existing experience, so I'd advise people to get involved and build their reputation.

> ***"It's about more than just saying, "I'm an engine coder" – I'd expect evidence of practical experimentation."***
> James Sharman, Climax

What do you look for when recruiting programmers?
All the best programmers I've met in my career genuinely enjoy programming, so beyond the core skill set, I like to see some hints that they are interested in the work. Even before starting work most candidates seem to have a pretty good idea what areas of programming interest them, so, obviously, I need to look at those in relation to the technical needs of the studio. For example, we are particularly interested in hiring graphics/engine coders at the moment, so those are keywords that will stand out on a CV. In that area of specialisation – as with any other – it's about more than just saying, "I'm an engine coder", I'd expect either experience or evidence of practical experimentation.

What opportunities are there for career progression?
Plenty, but it's not all about job titles. Programming in a team is often more about building confidence and respect. For example, if you start with a job title of 'programmer', the next step might be 'senior programmer', but it's not like we tick boxes until you get the promotion. More often than not a job title change is recognising and rewarding a change that has already taken place.
www.climaxstudios.com

If you've got job advice to share, email **Aaron.Lee@intentmedia.co.uk**

Employee HOT SEAT

Phil Mansell tells you what its like to work at the studio behind the stalwart MMO RuneScape

What do you do at your studio?
As executive producer, I have overall responsibility for *RuneScape*. The game itself, the services we provide, as well as the 170-person strong development and publishing teams who make it. My job is incredibly varied and always challenging – which is why I love it.

On the game-side, I work closely with our creative staff to shape exciting game content, ensure development runs effectively and talk with our community to make sure they're getting what they want.

On the business side, I manage the business unit's P&L, work with our marketing and business development departments on commercial opportunities. I also work closely with Jagex's executive team to make sure *RuneScape* is going in the right direction and contributing to the company's overall strategy.

> ***"We source training and provide time for staff to do personal projects."***
> Phil Mansell, Jagex

Jagex is known for its creative culture and it feels good to work every day with dedicated people who really love what they do and care deeply about their games and the communities who play them. The company has a proud and very successful heritage as one of the pioneers in online games.

Name: Phil Mansell
Title: Executive Producer, RuneScape
Developer: Jagex
www.jagex.com

How did you get your current job?
I was approached by Jagex recruiters over LinkedIn about a lead designer position. While I was pretty happy at my previous company, I had always wanted to work on MMOs and wanted to get experience in games-as-a-service and free-to-play monetisation models. Inside the company I moved onto *RuneScape* as design and monetisation manager, and later applied for and successfully got my current role as executive producer.

What perks are available to those working at Jagex?
Jagex has a good set of employee benefits like pensions, dental and health insurance, subsidised staff canteen, team 'jolly' funds, and, being in Cambridge, we have a cycle-to-work scheme and free bike repair.

I think the company is particularly good for inward mobility and opportunities for movement between departments. Often we have customer support staff moving to QA, or people from QA self-training and getting into content development. Learning and development is a big deal at Jagex, and we both source training and provide time for staff to do personal projects to explore their ideas and learn new skills.

What is the recruitment process like at your studio?
We are fortunate to have a dedicated recruitment team, who are both deeply familiar with our business needs and have a respect for helping candidates through the recruitment process. While it's slightly different for each role, we start by screening CVs, maybe asking some initial questions over email, then go to an informal phone or Skype interview. If that works out, we'll arrange an on-site assessment, where the hiring manager and key staff can talk with the candidate and any practical assessments can be run.

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Arkham City-maker, Rocksteady Studios, has a state-of-the-art 30,000 sq ft studio in a converted Victorian factory in Central London. It recently expanded its full performance motion capture studio, added new audio studios and an impressive open-plan breakout area.

Send your pics to:
Aaron.Lee@intentmedia.co.uk

NEW ON #DEVELOPJOBS

Our pick of new job listings from Develop's website

ANIMATION PROGRAMMER

Employer: Rockstar North
Category: Programmers
Salary: TBC
Type: Permanent
Location: Scotland, UK

Rockstar North is currently seeking an experienced animation programmer. Commercial experience is essential with at least two years and one published title on PS3 or Xbox 360. It is looking for a talented engineer to help it develop advanced character animation systems for large-scale games.

Find out more and apply at: http://bit.ly/1fMKJHz

MOBILE GAME DESIGNER

Employer: Playground Games
Category: Development
Salary: DoE
Type: Permanent
Location: Midlands, UK

Playground is seeking a designer to become a key creative member of its new mobile team. You'll be closely involved with all aspects of mobile game development, from initial research and competitive analysis, through the concept and prototyping phase, to full development, launch and beyond.

Find out more and apply at: http://bit.ly/1mCvQAM

TECHNICAL DESIGNER

Employer: Crytek UK
Category: Design
Salary: DoE
Type: Permanent
Location: Nottingham, UK

Crytek UK, located in Nottingham, is looking for technical designers to join its team. Working on both single and multiplayer experiences, the successful candidate will become a key member of a creative group looking to shape and refine the next wave of triple-A first-person shooters.

Find out more and apply at: http://bit.ly/1fHx8F8

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A peek under the hood of Silicon Studio's Yebis 2
p64

A look at Microsoft's suite of cloud gaming tools
p65

Heard About: Transformers Universe
p67

Opening up Linux

As the OS gains momentum from some of gaming's biggest companies, **Craig Chapple** investigates whether the platform has become ripe for game development

InXile Entertainment is working with Unity to port its crowdfunded title Wasteland 2 to Linux

THE LINUX OPERATING system was first released in 1991 as an open-sourced, community project. But for decades the platform has struggled to gain traction amongst the game industry and consumers.

That's all changing though, with web giant Google building its Android OS around the Linux kernel, and Valve releasing a Steam Linux client, as well as basing its own SteamOS on the platform for its new Steam Machines hardware.

PICKING UP STEAM

Having previously taken a backseat to Windows, Mac and the console space, Linux has now been thrust into the limelight as more developers and platform holders take advantage of it.

"It's reached a certain level of maturity, which helps a great deal, but it's also a reflection on other platforms' missteps," says developer Ryan Gordon, who has ported games in the *Unreal Tournament* and *Serious Sam* series to Linux.

"Specifically for games developers, the interest came in two waves. Humble Bundle demonstrated that Linux users exist and pay money – more on average than Windows and Mac users – and that started generating interest in Linux ports, mostly from indie developers. Then Valve shipped a Linux Steam Client, and SteamOS, and I started hearing from triple-A studios a lot more."

> ***"It's reached a certain level of maturity, but it's also a reflection on other platforms' missteps."***
>
> Ryan Gordon, Linux dev

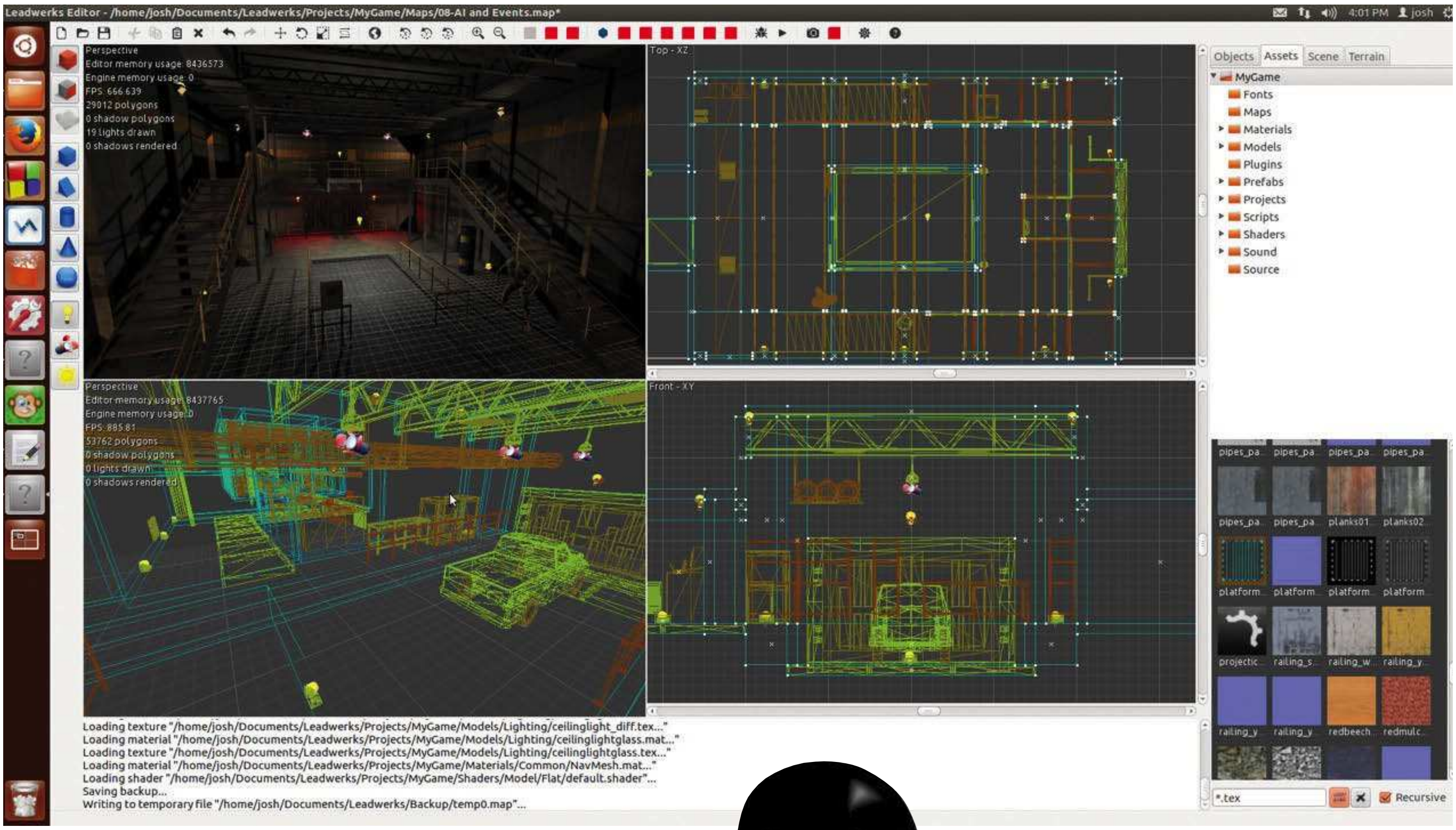
Today, the progress of Linux represents more than $10bn in research and development, and Linux Foundation executive director Jim Zemlin tells *Develop* that thousands of developers from more than 200 companies are contributing to the advancement of the platform, making changes up to nine times an hour.

"No single company can compete with that; instead, companies like Google with Android and Valve with SteamOS leverage that combined investment in Linux to build their businesses," says Zemlin, who also criticises Microsoft and Sony for creating what he calls closed next-gen systems, despite being heralded by many as a new, more open era for the console space.

"One of the main reasons the gaming industry is embracing an open approach is to get away from increasingly closed and locked-down approaches that are characterised by the Xbox One and PS4," he explains.

"An open OS like Linux engenders widespread collaborative development and contributions, which will pave the way for gaming hits of the future. We all know that one huge hit in the games industry can be transformational, but finding the hits is incredibly difficult. Today's gaming pioneers such as Valve understand that the hits will come from the bottom up, largely created by users."

This openness hasn't always been to Linux's advantage however, with many of its tools not always up to scratch compared to the proprietary tech developed for Windows, for example. ▶



Leadwerks Editor - /home/josh/Documents/Leadwerks/Projects/MyGame/Maps/08-AI and Events.map*
4:01 PM
josh
Perspective
Editor memory usage: 8436573
Engine memory usage: 0
FPS: 666.639
29012 polygons
0 shadow polygons
19 lights drawn
0 shadows rendered
Top - XZ
Perspective
Editor memory usage: 8437765
Engine memory usage: 0
FPS: 885.81
53762 polygons
0 shadow polygons
0 lights drawn
0 shadows rendered
Front - XY
Objects
Assets
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Terrain
MyGame
Fonts
Maps
Materials
Models
Plugins
Prefabs
Projects
Scripts
Shaders
Sound
Source
pipes_pa
planks01
planks02
platform
projectic
railing_s
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railing_y
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Recursive

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Loading texture "/home/josh/Documents/Leadwerks/Projects/MyGame/Models/Lighting/ceilinglight_diff.tex..."
Loading material "/home/josh/Documents/Leadwerks/Projects/MyGame/Models/Lighting/ceilinglightglass.mat..."
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Loading material "/home/josh/Documents/Leadwerks/Projects/MyGame/Materials/Common/NavMesh.mat..."
Loading shader "/home/josh/Documents/Leadwerks/Projects/MyGame/Shaders/Model/Flat/default.shader"...
Saving backup...
Writing to temporary file "/home/josh/Documents/Leadwerks/Backup/temp0.map"...
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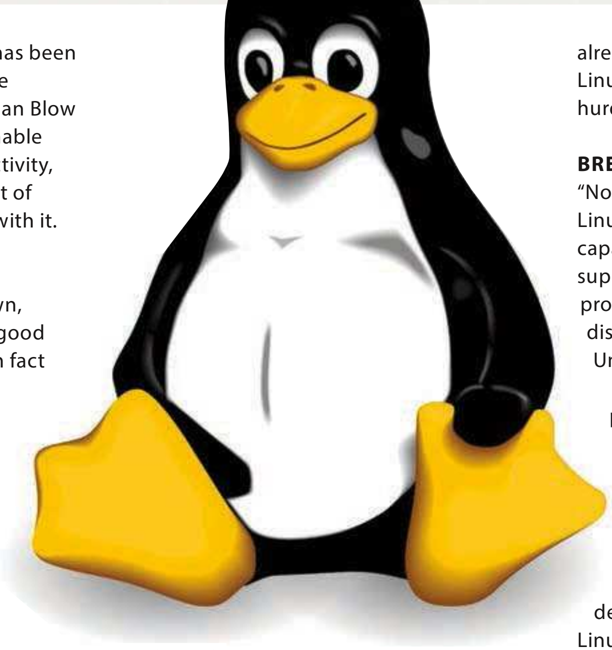
The Leadwerks editor (above) is set to run on Linux after successfully raising more than $40,000 on Kickstarter for support



A lack of decent debugging tools has been cited as a serious issue amongst some developers, with *Braid* creator Jonathan Blow last year claiming the lack of a reasonable debugging environment cost productivity, highlighting GDB as a particular point of contention, and the IDEs associated with it.

TOOLS BUGGING ME

Gordon says this criticism is overblown, to a degree at least, and that a lot of good development and debugging tools in fact started on Linux.

“Certainly, though, if you find yourself at a GDB command prompt without any instructions, it’s neither productive nor fun,” he states.

“There are tools that close that gap, but I imagine there’s been some migration of Windows developers that landed here, exclaimed ‘what the fuck?!' and then launched a mass exodus directly back to Windows. I wouldn’t blame them.”

Josh Klint, CEO of middleware provider Leadwerks, which last year raised over $42,000 on Kickstarter to fund Linux development compatibility with its toolset of the same name, agrees that debugging tools could be improved, but is hopeful for the future.

“Regarding debuggers, I’m presently using Code::Blocks for development, and its integration with the GDB debugger could certainly be better,” he says. “After seeing Valve’s demonstration of QTCreator at Steam Dev Days I’ll probably switch over to that before the final release, but right now I want to move forward, not laterally by switching tools.

“I’ve always been an OpenGL developer. OpenGL’s cross-platform compatibility and long-term stability always made it an obvious choice, for me. I don’t know DirectX as well, so I can’t make a comparison, but Valve is doing some really interesting things with debugging and performance optimisation tools for OpenGL. VOGL is an OpenGL tracer and debugger that runs on Linux. I haven’t tried it yet, but I watched a demonstration of it at Steam Dev Days, and it looks really nice.”

> ***“I expect that SteamOS is going to destroy the traditional consoles. The platform’s advantages are compelling.”***
>
> Josh Klint, Leadwerks

But even if things are now steadily improving beyond past technical challenges, breaking past the preconceptions that already exist with developers in regards to Linux-based development could be a difficult hurdle to overcome.

BREAKING PRECONCEPTIONS

“Non-Linux users are now starting to see that Linux does have competitive graphics capabilities, especially thanks to improving support from GPU vendors, and that the scary problem of supporting multiple Linux distributions is not so terrifying after all,” says Unity lead software developer Na’Tosha Bard.

The tool space is clearly improving, particularly on the back of support from Steam giant Valve, with its move to develop that new powerful OpenGL debugger explicitly for Linux. But it’s not just Valve; Rad Game Tools is also working on improving Linux debuggers, and Leadwerks is being designed for 3D game development on Linux itself and is now available on Steam.

Klint says that the middleware already supports the Steam controller, and will be ready for the SteamOS on day on, while he is also looking toward providing a low cost solution for developing virtual reality games on the OS. The Linux version of Leadwerks is expected to be released on March 15th, along with version 3.1of the standard edition.

Unity meanwhile offers options for developers to build their games for 32 or 64-bit Linux, as well as a headless build for those who want to run a multiplayer server for their title. The company is currently investigating options for a web content solution that will work with the platform.

As Zemlin says, while quality tools have certainly been lacking in the past, there has been a lot of progress on the scene.

“With Valve’s investment in Linux, a whole new community of developers are working on it,” he says. “And new tools, apps,

debugging software and more will result from that work.

“More importantly, optimisations for a great gaming experience on Linux don’t just come from the gaming sector. GPU powered supercomputer systems may benefit from optimisations produced by Valve or someone else tweaking Linux and vice versa. It is this wonderful cross-pollination in Linux that I believe will allow gaming to flourish once it has established itself.”

Valve’s Mike Sartain goes further, and says many of the historical challenges Linux is now known for amongst the development scene have either been resolved or are being chased by extremely viable and interested parties.

“These, of course, include driver optimisations and developer toolsets. With the help of leading GPU/CPU manufacturers and tool makers, that situation looks a lot different today than it did a year ago. And we certainly don’t believe that work is yet finished,” he states confidently.

AN OPEN FUTURE

With many of the hurdles crossed in terms of a quality games development environment on Linux, but by no means all of them, is the OS destined to become a popular platform for developers and consumers alike?

“Every consumer is different, but usually if they notice the OS at all, it’s probably not a good sign,” continues Sartain. “Consumers care much more about price, attractive content, reliable service, etcetera. As with all of our consumer-facing offerings, we’re aiming to build Steam OS with those attributes in minds, and whatever else our customers tell us they’d really enjoy.”

Valve’s strong support for Linux, not least with its SteamOS and Steam Machines, will be a boon for champions of the OS, and with Unity also on board helping power its rapidly growing library of games, Leadwerks’ own Linux tools and the likes of Humble Bundle promoting it, Linux could go from strength-to-strength.

The collaborative nature of Linux’s development ensures that as time goes on, Microsoft and Apple will have a lot to compete with in future, particularly as bigger companies like Valve and Unity jump on the bandwagon to bring efficient new tools to the platform.

And Leadwerks’ Klint pulls no punches in saying where he thinks Valve’s new OS and Linux will end up.

> ***“With the help of leading GPU/CPU manufacturers and tool makers, the situation looks a lot different today than a year ago.”***
>
> Mark Sartain, Valve

“I expect that SteamOS is going to destroy the traditional consoles,” he states. “The first couple of years will be rough, but the platform’s advantages are compelling. First, SteamOS is compatible with the PC gaming ecosystem, going back a decade. Second, the Steam Machines will have a much faster hardware refresh cycle, with new models coming out every year, while the PS4 and Xbox One were obsolete at release.

“Finally, because SteamOS is an open system anyone can develop software and hardware for, all the benefits of free market economics will come into play, leading to a greater diversity of products and more innovation. I’m amazed the console industry has been locked down by three companies this long.

“As for Linux desktop, I think that’s driven by commercial software. I think the purpose of Linux is to provide a stable open-source foundation on which commercial closed-source software can thrive. It’s important that the OS be owned by no one, because otherwise whoever controls it will periodically swoop in and steal all the value the software developers are creating. Windows 8 has software developers big and small terrified of a locked-down future, and they’re actively looking for an open alternative.”

From top to bottom: Leadwerks CEO Josh Klint, Linux expert Ryan Gordon, Unity lead software developer Na’Tosha Bard and Valve’s Mark Sartain

Top left: Facepunch’s Rust is one of a number of new games available on Linux

TIPS FOR NEW LINUX DEVELOPERS

LINUX EXPERT RYAN Gordon has had years of experience developing games for the platform, porting some of the biggest franchises around, including the likes of *Unreal Tournament* and *Serious Sam*. With so much knowledge of the OS, he offers some tips for developers trying to get to grips with Linux for the first time.

“If you’re starting from scratch, use SDL 2.0. It’ll save your life,” explains Gordon. “If you’re coming from Windows to Linux, port your game to SDL first, then port your game to OpenGL. Now you’ve done the bulk of the hardest work without even downloading a copy of Linux.

“Be wary of middleware. There’s lot of good middleware out there, but you just have to make sure you can get a Linux port of it (and, ideally, at no extra cost for the platform). Sometimes there’s no official Linux support, but source code is available, which is often just as good.

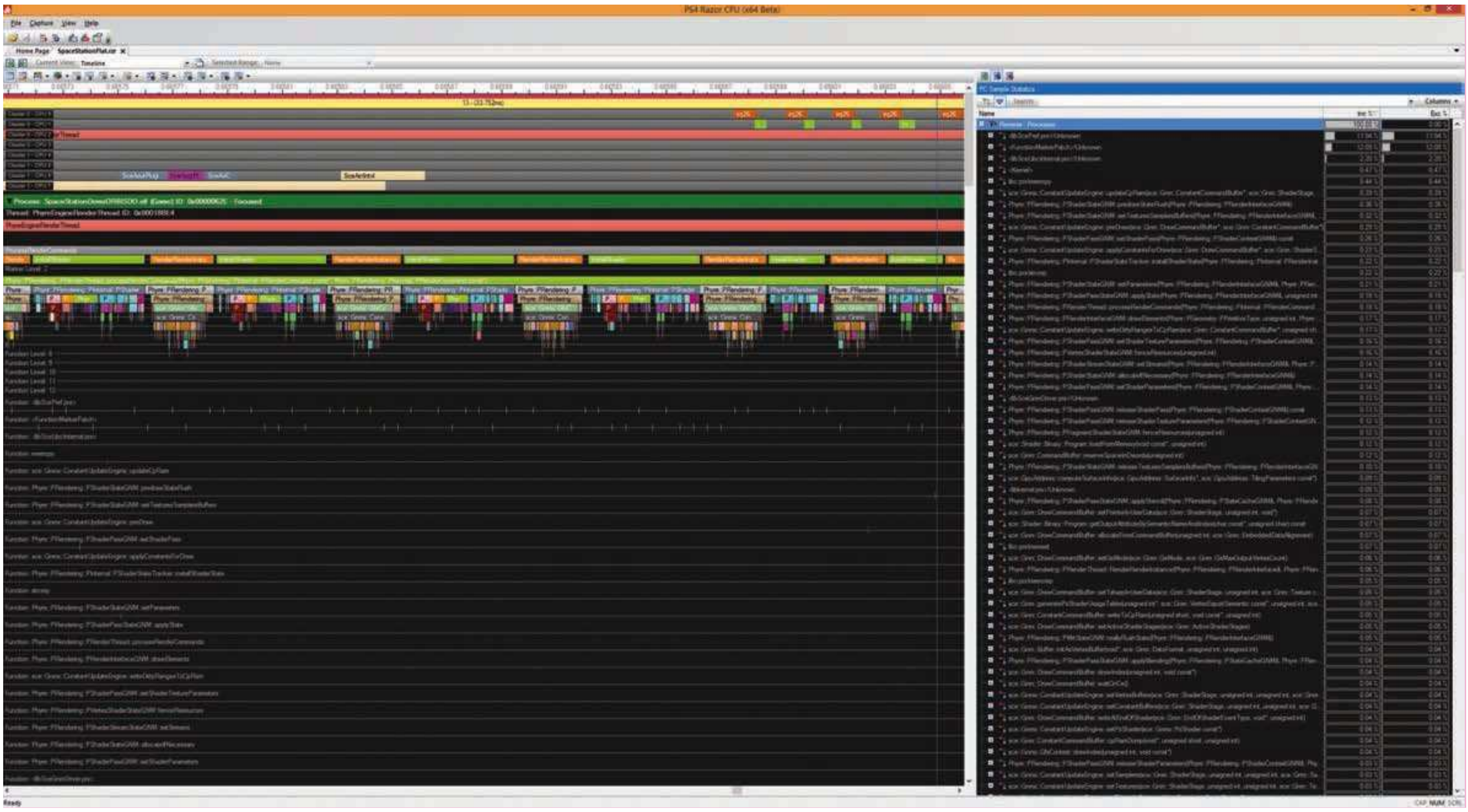
“Everyone has an unshakable opinion about their dev tools – myself included –but if you’re nervous about losing Visual Studio, QTCreator is worth a look. Most of the key bindings are identical, so you’ll have the benefit of muscle memory. Also, it’s a decent graphical debugger even if you don’t use the rest of the IDEs it offers.

“The videos Valve has just released from its Steam Dev Days conference – two of them from me – have some really good discussions about OpenGL, SDL, and Linux development, and are well worth watching.”

You can check out the videos at http://bit.ly/1ogk9hl or view an example in the digital edition of this issue.

Inside the System

Sony's internal console tools team SN Systems has been involved in PlayStation 4 for almost six years. Now that they can talk about their work, **Will Freeman** asks where they are taking the new generation



The tools powering PlayStation development have changed significant over the years to cater for both small and large development teams

How early was SN Systems involved in PlayStation 4?
Tom Charlesworth, chief technology officer: We got involved with PlayStation 4 a few years ago, back in 2008, which was about the same timeframe as Vita, or NGP as it was known back then. Really, at that stage, in terms of next-gen platforms we didn't have too many specifics in terms of what we were developing for. We were brought on very early, and so there wasn't much to go on, but at that point we definitely knew we needed to do a reboot of our existing tools.

By 2009 we were starting to have much more contact and context from the architects of PS4. We've had direct contact and engagement with Mark Cerny through the development of our Vita tools, and the PS4 tool chain as well. Initially we were there in a consultative role, being canvassed on the types of performance profiling hardware we would like to see in the next-gen PlayStation platform.

Come 2010, we started migrating our PS Vita tool chain to PS4. At that point we'd been working on our Vita tools for up to two years, and were then ready to retarget them for PS4.

By this stage you must have had more of an idea of what you were working towards.
Charlesworth: Yes. On the one hand there's a proportion of our tools that at their core are relatively generic in terms of PlayStation platforms. But what we expose at the UI level – so with our GUI tools – we have to deliver something very tailored.

By 2012 our tools first went out to the first-party SCE Worldwide Studios teams, and then a little later they made their way to selected third-party teams; perhaps at about the mid-point of 2012.

> ***"We were brought on very early for PS4, but at that point we definitely knew we needed to do a reboot of our existing set of tools."***
> Tom Charlesworth, SN Systems

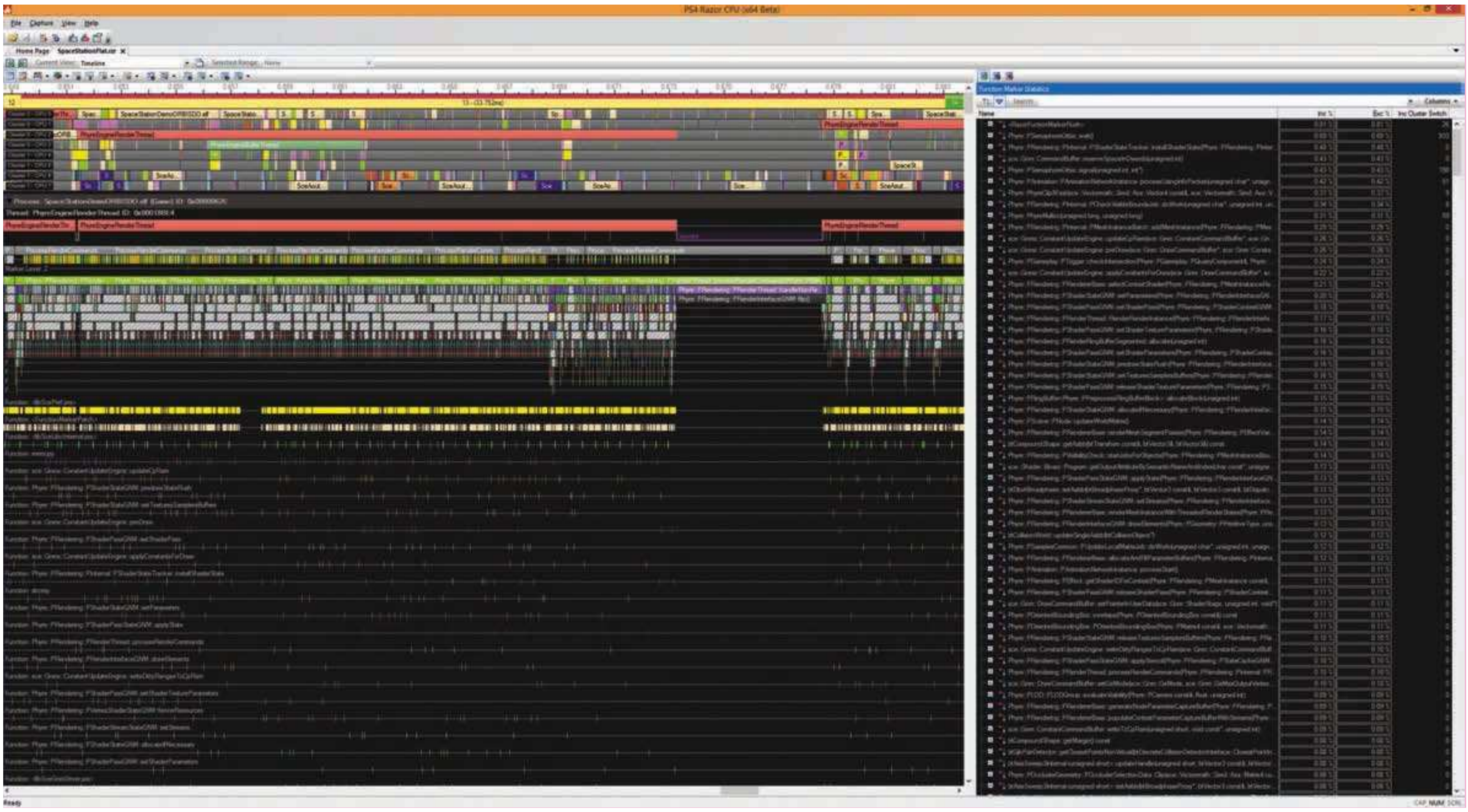
From then it got pretty busy. There was a lot of collaboration with Sony Computer Entertainment and its teams around the world from London to Japan. Feedback was coming in, and there were a lot of new releases of both SDKs and kernels coming out of Japan, which we had to both respond to and keep pace with. It was a lot of work, but we'd seen a similar pattern on PS Vita, so we were prepared for it. To a certain extent, the way we organised ourselves handling PS Vita served as a prototype for PS4. It felt a little like business as usual.

Bernard James, VP, Development: Of course, we were also doing three or four Vita releases a year at that time, and the same engineers were working on PS4 projects. That was great in several ways, but hard work. And then the testers were faced with a similar challenge when it came to the QA cycle.

The synchronicity of tackling the two together must have had its advantages.
James: There were certainly positives, as the core of the software is common on both platforms. That meant it was tested twice. That was really very valuable. It helped us make them an order of magnitude more reliable.

Tony Liviabella, SN Developer Services Manager: One of the core messages was to ensure stability and ease of development on PS4. That goal was across the board in all SCE R&D teams including SN Systems, and we really focused on that mission.

What about how the audience you're serving is changing itself? Has that had much impact on how you've worked?
Charlesworth: Certainly back in PlayStation 2 times the tools we were making were very much aimed at the larger teams. But it hasn't been a very sudden change. Beginning throughout PlayStation 3 and certainly with the PS Vita, there's been a trend in that our customer demographic has changed, and



that's brought us to where we are with PS4. Where our tools now sit, in terms of the development environment, is now more familiar for a wider range of devs, and even to those used to developing for other platforms.

Liviabella: It's been a challenge to get right, trying to meet everyone's requirements, but we feel we have a good balance. However, we're always meeting with developers and recording their feedback to help keep us on track and in touch with their needs.

Charlesworth: We do hear from these veterans that have done 25 years in the business. They really loved the PS3 tuner (the profiler), debugger and such, and that's great.

Liviabella: While we've always made a point of maintaining a close relationship with developers through studio visits and conferences, it's just not possible to meet with everyone. So, to ensure everyone's voice is heard, our developer services team based here in Bristol and in California both work to support all PS4 developers via the private support network.

This is another effective channel for communication and allows anyone developing on PS4 to submit feature requests for the tools. While we can't promise they'll all be implemented, everything is logged and quantified by the dev teams in their product planning stages. This really helps prioritise features based on the majority rather than those that just shout the loudest.

Where have your tools advanced the most as a result of your work supporting teams working on PlayStation 4 projects?
Charlesworth: For PS4, the choices around how we advanced the compiler were something that proved to be very important. Previous PlayStation platforms have all been RISC based, and this was the first x86-based platform. We have our own compiler technology that we've used on all the previous platforms, up to and including PlayStation 3, which has never had support for x86. That, coupled with the fact that we had a lot of development support work for PS Vita still going on, meant that our own compiler technology wasn't an option. Ultimately we went with Clang/LLVM.

We made that decision when both those technologies were essentially immature. But we saw the trend in terms of how the open-source community was advancing forward both those technologies, and we're very happy with where we are now.

> ***"There's a lot of knowledge which is proactively shared within and across teams, which is important to our future success."***
> Tony Liviabella, SN Systems

And you've done much to advance your profiler now?
Charlesworth: Our Vita profiler is called Razor, and that's a joint GPU/CPU profiler. That was something new for us. We've taken that same technology, and moved it over to PS4.

One of the problems we were faced with on PS4 was that the hardware profiling embedded within the SoC wasn't so attractive, compared with what was available for Vita. We had to be a bit more creative in terms of solving problems similar to those we experienced with Vita, where we had hardware assistance. We had to solve the problems in software, but we're very pleased with the results. It's going to really help CPU engineers by letting them tune and speed up their code.

So what next for SN Systems, with regard to the post-launch PlayStation 4?
James: Well, we've got a huge amount of work to do for PS4 going forward. Getting ready for launch was all about stability. The studios making launch games were grappling with very short timescales, and the tech they're using was changing very rapidly.

And with us working with the rest of SCE R&D so closely, before launch we had to be very careful about changes that depended on work in those other teams. Their focus, of course, was on a stable kernel and SDK. That means now, after launch, we can start to add a lot of extra stuff over the next 18 months.

What about SN Systems' progress over this time?
Liviabella: SN Systems has grown significantly in recent years and we're now up to around 85 people – 70 of those in R&D – across the Bristol HQ, Campbell and Dublin offices. We have a number of very experienced engineers, including many with ten-to-15-years-plus of SN involvement.

There's a lot of knowledge which is proactively shared within and across teams; this is incredibly important to our future success and an on-going process. While it can be quite a drain on the senior guys, we've now reached a point where the skill set has increased sufficiently between the most senior and less senior engineers. Additionally, while our priority is still on the day to day work it's also important engineers have some quality time to focus on R&D and innovation in the tools, which has been improving significantly.
www.snsystems.com

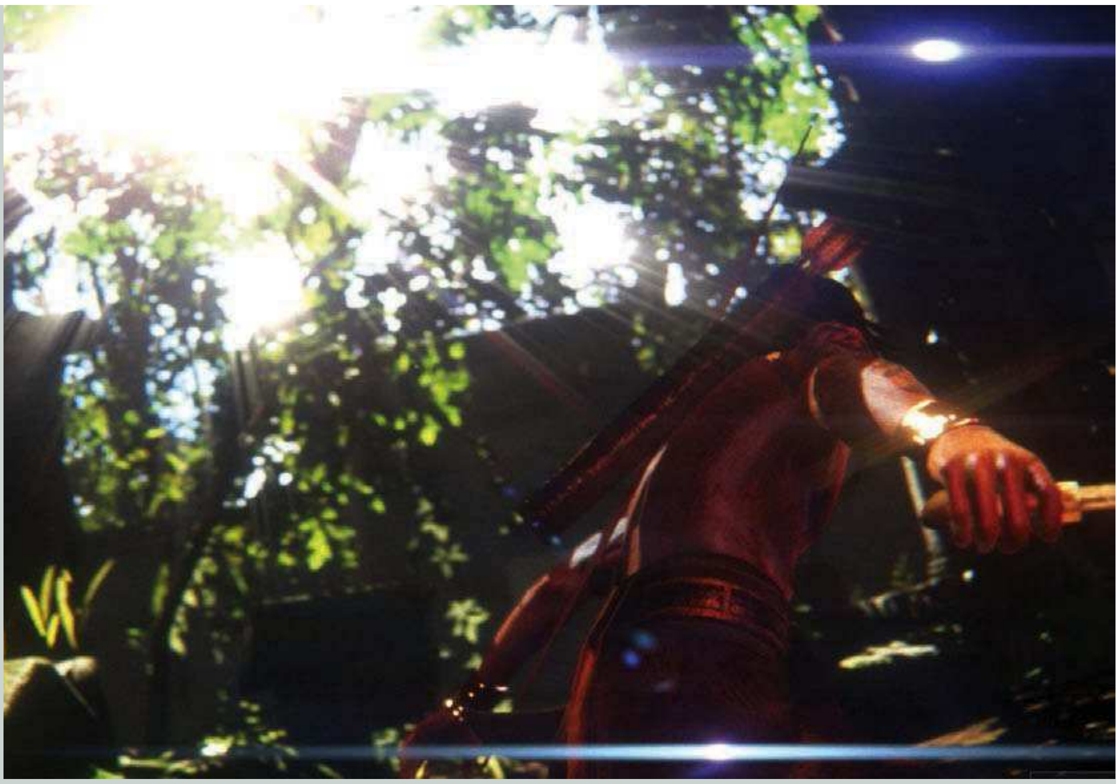
Top to bottom: Tom Charlesworth, Bernard James and Tony Liviabella of SN Systems

KEY RELEASE

Light ’em up, baby

Aaron Lee gazes at Yebis 2, one of the first post-processing graphics tools for the new era of consoles, PCs and mobiles

What is it? A post-processing effects tool that its maker says takes game graphics on all platforms to a new level of realism
Company: Silicon Studio
www.siliconstudio.co.jp/en



Silicon Studio’s Masaki Kawase (top) and Takehiko Terada (bottom) say their post-processing tool is a cost-effective solution to achieve filmic visuals

Above right: A tribal warrior is bathed in the warm glow of sun rays – Yebis 2’s bloom feature in full effect

Right: Yebis 2’s Rigid Gems demo was used by Google at the unveiling of the Nexus 7 tablet

Silicon Studio

Find Silicon Studio at booth 1335

GDC 14

BACKED BY THEIR powerful processors and GPUs, the new breed of PCs and games consoles are getting closer to the spectrum of approximately 1,000,000 contrasts of light visible the human eye.

But they still need help to display the subtle patterns and lighting conditions that shape our visual world, which is where Yebis 2 comes in.

This post-processing effects middleware aims to take games graphics to new levels of realism. Created by Japanese firm Silicon Studio, the tool employs a special method of processing algorithms in a way that is as physically accurate as possible.

Post-processing effects are the visual tweaks to a frame that has already been fully rendered in order to enrich its visuals, similar in part to retouching digital photos. It’s this process that allows creators to simulate gems glistening on a marble table as a camera pans around them or the sweat beads on a character’s biceps.

OPTICAL ILLUSIONS

Yebis 2 has been designed for practically all major platforms, including PS4, Xbox One, PC, Linux, Android and iOS. As well as being a competent instrument for large teams working on projects of gigantic scale, such as the trailer for Square Enix’s *Final Fantasy XV* and its earlier tech demo *Agni’s Philosophy*, Silicon Studio CEO Takehiko Terada says Yebis 2 is just as ready to serve the needs of small teams and projects. Most recently, the tool has been used to power Square’s arcade-action game *Gunslinger Stratos 2*, while its *Rigid Gems* demo was used at the unveiling of Google’s Nexus 7.

“Yebis 2 is backed by over a decade of R&D that covers a wide range of effects, including realistic camera lens simulation to make photorealistic optical effects possible,” says Terada. “Silicon Studio R&D teams spent over ten years studying and researching optical effects, looking at how the human eye perceives visual information. We then applied all this knowledge into our middleware delivering unparalleled quality in the considerable range of visual effects.”

For all of these post-processing effects, such as depth of field, glare and colour grading, the tool has been made with quick integration in mind.

> ***“Depth of field is a key visual effect to simulate the kinds of effects cameras have been able to deliver in film.”***
> Masaki Kawase, Silicon Studio

“As next generation developers attempt to make games look even more realistic, depth of field is a key visual effect to simulate the kinds of effects cameras have been able to deliver to audiences in the film industry,” explains Masaki Kawase, lead software engineer at Silicon Studio. “Another important facet of post-effects is to allow games developers to inject stylistic appeal into the final visual scenes. This includes using glare and ‘god rays’ to accentuate areas of relatively high illumination to emphasise their impact, or applying colour grading as a final step to help dictate the mood of the environment.”

MAX VISUALS, MINIMAL COST

This bounty of effects, coupled with its easy integration is Silicon’s pitch for Yebis 2. And as dev costs ramp on next-gen, Silicon is offering a solution geared towards minimising costs while also maximising the visuals. Yebis 2 is offered at a price for per-SKU-per-title, which Silicon says means manageable pricing depending on the development budget.

Terada reiterates the company’s commitment to this vision: “Games now require more complexity and higher quality graphics. Yebis 2 is there to answer the call and satisfy the hearts of gamers.”

That’s something that the tool seems well suited to achieving.

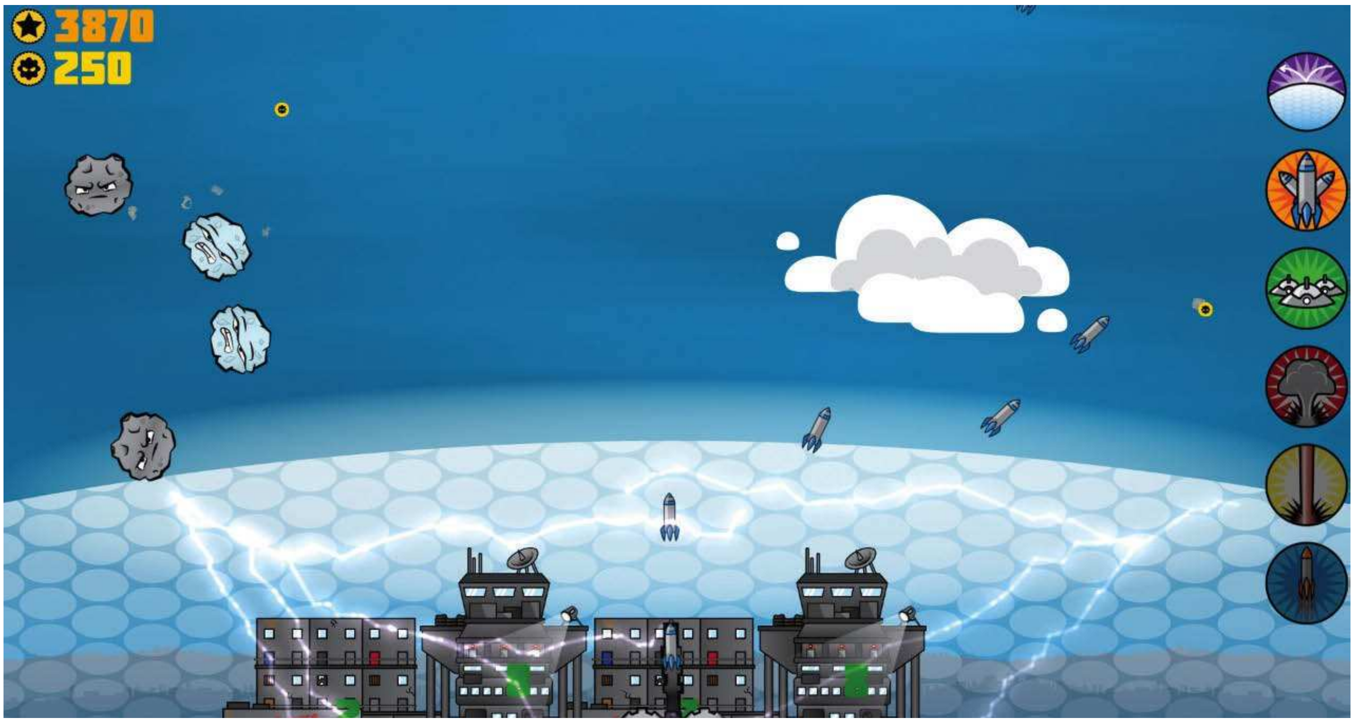
Yebis 2 is due for an upgrade this year, and Kawase describes some of what’s on the drawing board for the tool: “In the near future, we aim to expand on the repertoire of photorealistic effects-based on optics. An example is representing realistic bokeh by simulating aperture blades and chromatic aberrations. This includes being able to recreate the different colour fringes between ‘front bokeh’ and ‘rear bokeh’, and subtle changes to the shape, taking into account properties such as the number and the curve of the aperture blades.” ■

MICROSOFT SPOTLIGHT

Cloud gaming stars

Microsoft continues to bring indies the power of a cloud-based back-end

The platform: Windows Azure
What is it? A cloud services platform that enables developers large or small to support multiplayer and community gaming features, monitor data and harness the cloud in many other ways



Top to bottom: John Wetherall of Cool Game Arcade, Whispering Gibbons' Joe Stevens, Beard Bandits' John Van Rij and Lemon Moose Games' James Mintram

Main: Beard Bandits used Azure to power its cloud services in Comet Chaos

IT'S EASY FOR indies to shy away from the technology enjoyed by triple-A teams. After all, such tools are assumed to be expensive, complex, and tailoured for studio headcounts that demand vast seas of desks.

Microsoft has increased efforts in recent years to provide teams of all sizes with accessible tools and services, allowing them to support their games with multiplayer, leaderboards, data and analytics, community features and a range of publishing tools.

Today, that range is neatly packaged up in 'games as a service' offerings from third-party tech centered around Microsoft's own Windows Azure cloud platform (*see 'What's on offer'*). A platform-agnostic initiative, it's particularly relevant to teams building a back-end for iOS, Android, Windows and Web projects.

And it's all integrated with Microsoft's Visual Studio Online toolset, meaning studios can easily create games and build a cloud back-end in a unified development pipeline.

ON THE GROUND

But what does all this really mean for small teams, and what are the tangible benefits?

"To us using the cloud is critical. We couldn't make the game we want to without it," says Joe Stevens, co-founder of Whispering Gibbon, currently hard at work on mobile title *Tiny Trees*, and a user of Microsoft's offering. "There are already so many services out there but what is really exciting is the growing number of easily customisable services. People can take advantage of these to bring really exciting elements to their games. This is something we're looking forward to seeing more of."

> ***"We used Windows Azure for our cloud services and found it helpful for quickly building services and prototyping on our ideas."***
>
> John van Rij, Beard Bandits

Another studio making use of the suite of cloud solutions and services is Cool Game Arcade, as MD Jon Wetherall explains: "Cloud services allow us to create games which give the players persistent logins and user data. This allows us to form a closer relationship with our players, both in terms of understanding how to improve their experience and to move their play from device to device or even to different platforms."

GAMES AS A SERVICE

Meanwhile, the team at Beard Bandits – formed by University of Hull graduates – have found that the cloud offers much more than its most obvious attributes.

"We have primarily used Windows Azure for our cloud services, and we found it helpful for quickly building services and prototyping our ideas," says owner John van Rij. "Cloud services have also helped us to refine *Comet Chaos*."

And for James Mintram, director of Lemon Moose Games, harnessing these cloud services and tools have been an exercise in accessibility and affordability.

"I don't think there is any non-technical barrier to leveraging the cloud. As Microsoft Bizspark members we get an allowance per month to use with Windows Azure services."

For these teams, games as a service firms like GameSparks are doing great things. It's affordable, accessible and flexible, and the benefits they bring means it's something many teams would be wise to consider.■

aka.ms/Cloud_Gaming

WHAT'S ON OFFER

MICROSOFT'S CLOUD TECH is available to developers large or small who wish to build their own 'game as a service', or by providers such as GameSparks.

Windows Azure lets studios support multiplayer, multi-device, multi-title, multi-platform gaming experiences, and gain insight on how games are being played and monetized through our cloud data and analytics capabilities.

Windows Azure also serves as a platform on which partners have built other 'games as a service' technologies that are integrated with Windows Azure, including GameSparks' suite of tech.

Find Microsoft at booths BS2522 and CC2304

GDC 14

Unreal Engine tools helped Starbreeze to build large environments for Brothers (above) that each had its own style and mood

UNREAL DIARIES

Brothers not so grim

Starbreeze Studios weaves an Epic story with Brothers: A Tale of Two Sons

Brothers: A Tale of Two Sons
Developer: Starbreeze Studios
Publisher: 505 Games
Platform: PC, PS3, Xbox 360
www.brothersthegame.com

STARBREEZE STUDIOS, KNOWN for its gritty titles *Syndicate* and *Payday*, brought a delightful palate-cleanser to PC, Xbox 360 and PlayStation 3 last year in the form of *Brothers: A Tale of Two Sons*.

The Nordic fairy tale-inspired game, published by 505 Games and co-developed by director Josef Fares, presents a mysterious and unexplained world. Wildly beautiful environments, from idyllic country villages to rugged snow-capped mountain passes, beg the player to pause and drink in the scenery.

Campaign gameplay, which involves controlling two characters simultaneously, revolves around the adventures and interactions between a set of young brothers as they traverse the storybook landscape in search of a mystical cure for their dying father. As the game progresses, it becomes increasingly important for the player to guide both brothers to work together in order to overcome obstacles and puzzles.

Each brother is controlled by separate analogue sticks, with the older brother controlled by the left and the younger brother controlled by the right. It's this unique control scheme that is crucial to the player experience and narrative.

"The controls are part of the storytelling. We really want the player to feel that the left hand is the big brother and the right hand is the little brother," says Fares. "Most of the puzzles are created to make the player feel an emotional connection between the brothers."

> ***"Brothers would simply not have been the same experience if we didn't constantly introduce unique environments to the player."***
>
> Claes Engdal, Starbreeze

When evaluating engine tech, Starbreeze quickly realised Unreal Engine was the necessary solution to bring their vision to life.

"As a small team working on such a game, it was essential to have tools that allowed for rapid iteration of levels," says art director Claes Engdal. "*Brothers* would simply not have been the same experience if we didn't constantly introduce unique environments to the player. The Unreal Engine tools helped us quickly build large environments from modular assets. Throughout the project we could easily iterate on materials, composition, lighting, atmosphere and post-processing in order to give each area its own, specific look and mood."

Engdal credits the tight integration between all systems in the Unreal Engine toolset for helping the team stay efficient throughout production. "Editing a particle effect is just one double-click away in the Content Browser. This helps us be a lot more cross-disciplinary, so if the effects artist is busy, a 3D artist can easily jump in and tweak the particle effect without any hassle."

AN UNFORGETTABLE PARTNERSHIP

In fact it's the strength of the all-purpose approach afforded by Unreal Engine, says lead level designer Filip Coulianos, that simplified the development pipeline and enabled the studio to focus on making an unforgettable game.

"The level creation, level streaming and art pipeline are very neatly fused together. Getting assets into the engine and preparing them to be put out in the level is very quick and effortless. Thanks to the streaming, the whole art and level design team can work together on a single level at the same time without interfering with each other. This flexibility enables us to keep the art and level design team super-slim and super-agile throughout the entire development process, which in *Brothers*' case proved to be extremely important."

Offering reassurance to other studios that might be trying Unreal Engine technology for the first time, lead programmer Carl Granberg addresses one of the engine's strongest attributes: "It's easy to access and easy to understand right out of the box."

Visit **www.starbreeze.com** for more. ■

Find Epic Games at booth 1224

UPCOMING EPIC ATTENDED EVENTS

Swedish Game Awards 2014
March 8th to 9th
Huddinge, Sweden

Game Developers Conference 2014
March 17th to 21st
San Francisco, USA

PAX East 2014
April 11th to 13th
Boston, USA

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HEARD ABOUT

Machine music

John Broomhall discusses the challenges of creating triple-A audio for MMOs with Jagex's head of audio Stephen Lord

Transformers Universe
Developer: Jagex Games Studio
Publisher: Jagex Games Studio
Platform: Linux, Mac, PC
www.transformersuniverse.com

TRANSFORMERS
UNIVERSE
JAGEX

An unexpected combination of MIDI and orchestral sounds were put into the mix for Jagex's online take on Transformers (above), says the studio's head of audio Stephen Lord (below)

You joined Jagex two-and-a-half years ago. What were your key objectives?
I came to Jagex because I saw an opportunity to make a significant difference; to bring my experience from titles like *APB* and *Harry Potter*, and help instil those high production values and that ethos in the team and our games. My remit was to overhaul our approach and I've been given full autonomy with strong commitment and support to do so. I have a fantastic team and I empower them with the freedom to express themselves creatively. The attitude here is excellent and there's always been the desire and the resource to make that happen.

What are the unique audio challenges of a Jagex MMO title?
Getting my head around the sheer size of *RuneScape* was my first challenge. With 1,000 tracks, 5,000 characters and over 30,000 sound effects, it's a question of how and where you start. For bandwidth reasons, the soundtrack was MIDI music unlocked as gameplay rewards, and most sound effects were generated with a built-in synth. Updating the audio is a bit like painting the Forth Bridge, getting half way across and having to start again, so we have to choose priorities carefully.

Our ambition is to stand proudly alongside the very highest standards in game audio but achieve this within the easy access environment of a browser title. Investment in dedicated audio streaming servers has been vital in allowing us to produce a high quality soundtrack.

The ultimate challenge is to keep the whole audio experience interesting and rewarding. Our players may spend many hours in-game in one geographical area developing just a single skill, so keeping the audio varied and entertaining is key.

My approach has been to produce engaging audio for benchmark content such as quests. This involves bespoke soundtracks and fully voiced characters, which re-enforce the stories being told and help bring our characters and lore to life. Another important consideration is that audio must be a functional aid encouraging players to use it for a competitive advantage or notifications.

What talents and facilities are brought to bear on Jagex's audio?
There are eight of us in the audio department producing music, sound effects and voiceover direction and implementation. We also have dedicated audio coding resource available.

When Jagex moved into our new building we designed a purpose-built audio facility with communal areas and dedicated booths. At other places I've worked, sound designers have been isolated from each other. I believe our setup gives us the best of both worlds with privacy as well as an environment for collaboration, brainstorming, and building team synergy.

We also work externally now with a lot more people. Voiceover services are handled out of house as we work with studios in both the UK and US. Music is still mainly written in-house but we also use freelance composers, orchestras and session musicians. As an indication of our recent ambition, we recorded with The Philharmonia Orchestra at Abbey Road for *Transformers Universe*.

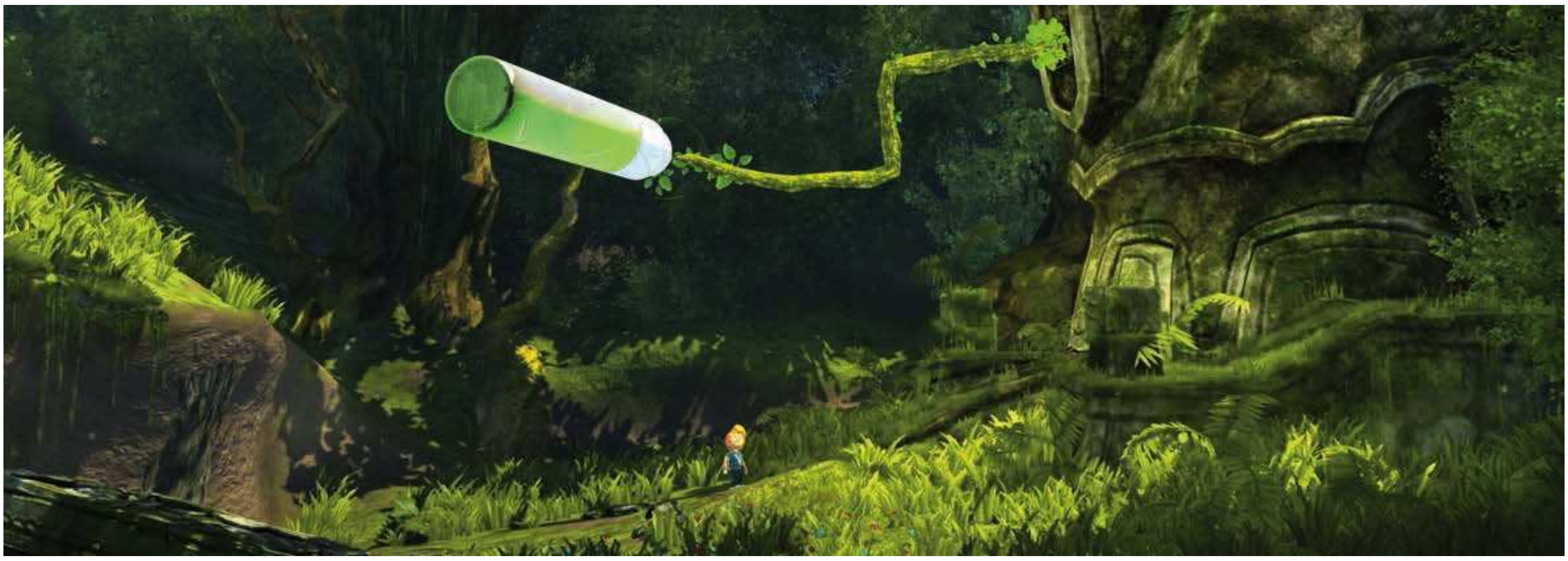
> ***"We want to be sympathetic to songs and themes that have become known and loved."***
> Stephen Lord, Jagex

There's a staggering three days' worth of music in RuneScape. How come?
It has just evolved over the 13 years *RuneScape* has been around. New content is released on an often weekly basis and music is written to support that. Our new music servers remove the reliance on MIDI, but that brings the new challenge of rewriting and replacing over a thousand tracks. Nostalgia is important though and we want to be sympathetic to songs and themes that have become known and loved over the years, as well as wanting to bring a new direction and freshness to the sound.

I worked with composer James Hannigan and recorded new and reworked themes with an orchestra in Bratislava. We also brought talented classical and folk musicians in-house to jam ideas and use their musicianship to evolve much of the new soundtrack organically.

What's next?
Our audio goal is to give *Transformers Universe* a strong sonic identity. The factions need to have strong audio signatures as well as personification bringing the individual characters to life. ■

John Broomhall is a game audio specialist creating and directing music, sound and dialogue. Find him at: **www.johnbroomhall.co.uk**



UNITY FOCUS

Max power

Danish studio Press Play reflects on Max, the first Unity-powered game on Xbox One

Max: The Curse of Brotherhood
Developer: Press Play
Publisher: Microsoft
Platform: Xbox One, Xbox 360
www.pressplay.dk

Top-to-bottom: Mikkel Martin Pedersen, Lasse Middlebo Outzen and Forest Swartout Large of Press Play

Why did you choose to use Unity? What did it enable you to do that other game engines couldn't?
Forest Swartout Large, producer: Press Play has been using Unity for quite a while now, since 2008. It allows us to prototype and iterate quickly, which is essential for how we work and it really allows us to have the playful approach to game development that we always strive for.

What features were most helpful?
Mikkel Martin Pedersen, lead designer: In Unity it is really easy to create your own tools. So you can say that the best feature is the stuff we create ourselves, and the next best one is that the engine lets us create the best features.

Lasse Middlebo Outzen, lead artist: Unity's component system is really useful for quickly adding functionality and features. There is a very short route from idea to seeing functionality in-game. Also, Unity natively supports many file formats. The native Photoshop support is tremendously useful from an art perspective.

Which features needed improving, and can you explain why?
Large: There are a lot of areas that would be cool to have more support for: audio, animation, rendering, UI, cinematics, console debug tools, memory handling, and I could go on. Better and faster process for compiling and building would be helpful as well. It's obvious, but worth noting, that every engine is a perpetual work in progress and as developers we will never be satisfied. We were lucky to have had an extremely capable team which made any development hurdles pretty painless.

> ***"Unity's component system is really useful for quickly adding features. There is a very short route from idea to seeing functionality in-game."***
> Lasse Middlebo Outzen, Press Play

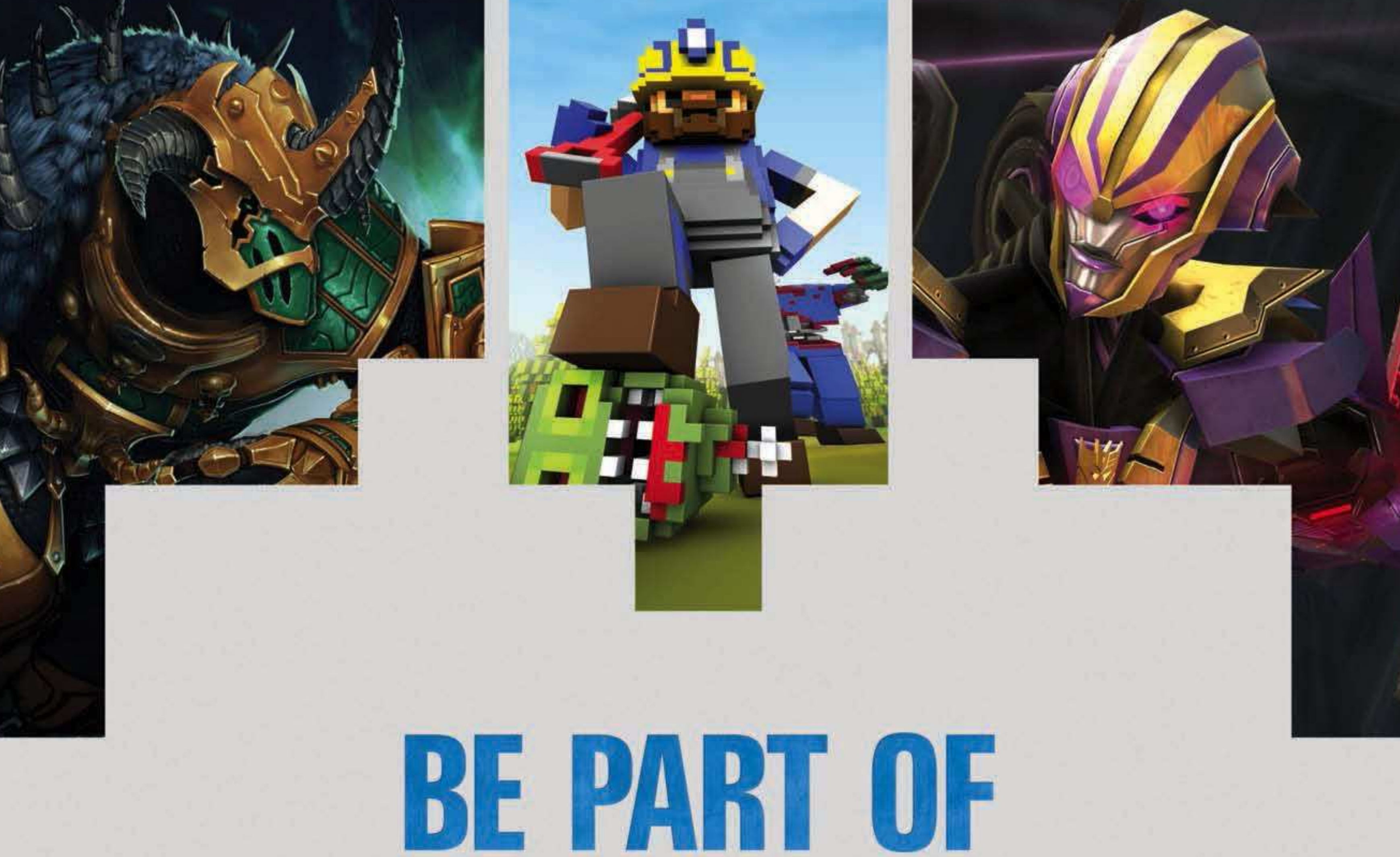
What was the biggest lesson you learned about using Unity during the development of *Max*?
Large: There are several lessons worth sharing. As with any game engine, but to a large extent with Unity, good code architecture and file structure are super important. Unity is great for prototyping, but the quicker and dirtier you prototype, the more important rewriting code and refactoring becomes.

Also, because Unity is not as mature or as console-centric as some other engines, it's important to set aside time for optimisation throughout development (and starting this earlier than one would normally). Researching and planning ahead which plug-ins should be bought and which will be custom is a good thing to do early on. For example, we wish we had just gotten a plug-in for video playback. And lastly, what seems easy might end up being surprisingly hard, so having a plan, and several contingency plans, is always a good thing.

As the first example of Unity on Xbox One, how do you think your game showcases the capabilities of the engine?
Large: I think the graphics are a good example of how we worked successfully with the engine.

Would you recommend Unity to other Xbox One developers, or other studios in general?
Large: I think it depends on a lot of factors. What kind of game is it? Are there other games like it that have already been made/proven in Unity? What are the project goals and team ambitions? What's the schedule? Will it release on many platforms? Above all, working with Unity this early in the new console cycle requires a high level of experience and skill, so I would only attempt it with the right team. On the other hand, I just got an email from a friend who was looking for advice on how to get into the games industry, and my advice to her was to download Unity and start making a game. ■

Find Unity at booth 1402



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JAGEX RUNESCAPE ACE OF SPADES BATTLE BUILDER TRANSFORMERS UNIVERSE

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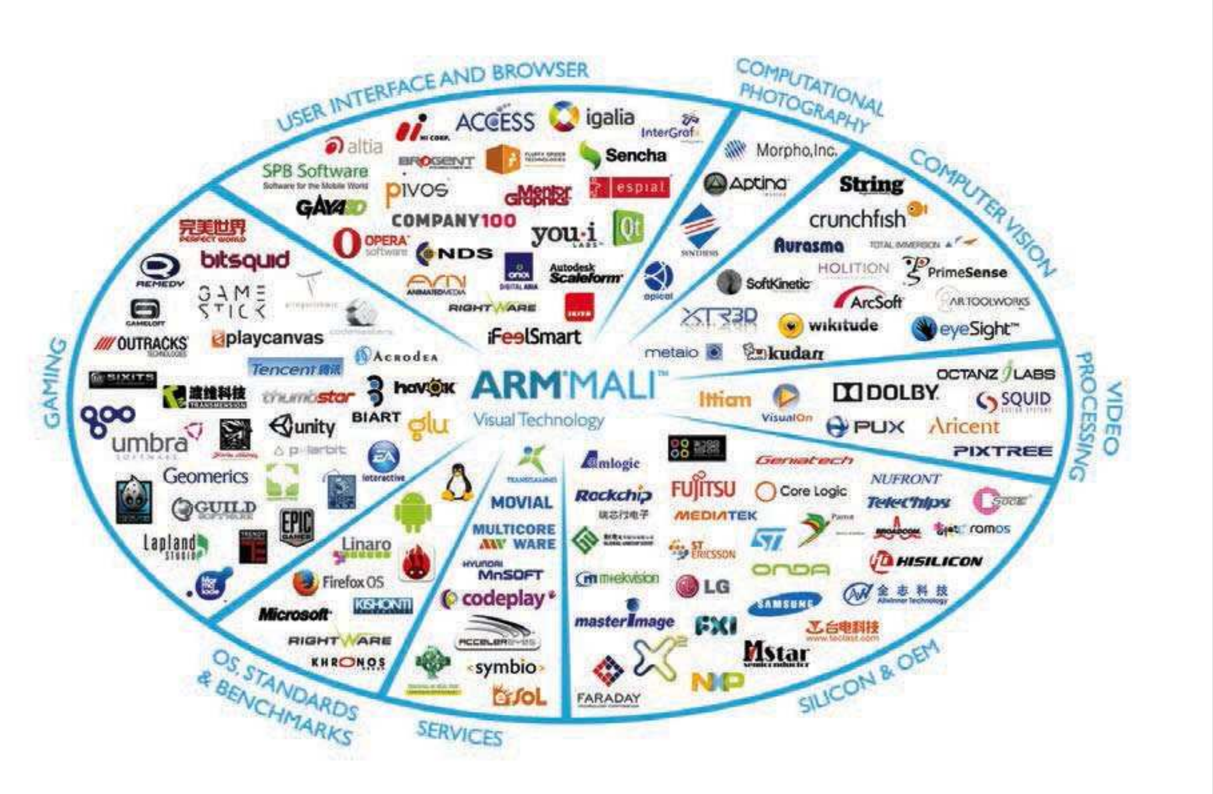
GEOMERICS SPOTLIGHT

Acquisition and expansion

Chris Doran and **Dennis Laudick** discuss what developers can expect now that Geomerics is part of ARM



Geomerics' Chris Doran (top) and ARM's Dennis Laudick (above), who says the acquisition has given ARM better access to the award-winning Enlighten technology, while Geomerics can draw on the support and experience of ARM's global partners (main).

DECEMBER 2013 MARKED the start of a new chapter for Geomerics. The firm was acquired by ARM, the Cambridge-based designer of mobile CPUs and GPUs.

But what lays behind this purchase and what are the implications for developers?

"We were attracted to Geomerics for a number of reasons but foremost was Enlighten, Geomerics' award-winning technology for real-time lighting" says ARM's VP of partner marketing Dennis Laudick.

Enlighten has already been deployed in a number of high-profile titles, but with *Battlefield 4* and *Need for Speed: Rivals* using the tech on Xbox One and PS4, Geomerics looks to be in pole position to service the next generation of games.

"The quality of titles and developers that Geomerics works with was important to us," continues Laudick, "but equally important was that Enlighten is genuine run-time technology."

Geomerics was the first company to start licensing run-time global illumination technology as a middleware product when it launched Enlighten in 2008.

"There were a number of firms licensing technology for offline baking, but we wanted to get away from baked lightmaps and offer a fully dynamic alternative," says Geomerics director Chris Doran.

Laudick adds: "That is what was really interesting for us. It is great technology and Geomerics is working closely with developers, which gives the team a deep knowledge of what they really want to see in the hardware, and where they expect specific technologies to run.

"We have a good dialogue with our middleware partners on these issues, but the chance to get first-hand knowledge from graphics experts was very compelling."

ENLIGHTENING NEW MARKETS

Doran explained what the acquisition means for the future of Geomerics: "ARM shared our vision that real-time global illumination is absolutely key to the next evolution in graphics quality and immersion. We cut our teeth on the last console cycle, and have mature technology for this generation. The next big challenge for us was bringing the technology to mobile and ARM was a perfect fit for that.

"Over 2013 we started talking directly to mobile developers, and this meant we were working with ARM and other mobile companies on optimisation. It became apparent to us that ARM's global reach on mobile could really help us grow."

One point that was critical to Geomerics was getting ARM's support for its existing roadmap. Doran says: "Techniques developed on PS4 and Xbox One will shape the agenda for graphics on mobile devices for years to come. It is important for us to be deeply involved in this work and ARM fully supports that. It has a quite realistic view about what is achievable on mobile versus consoles and wants to ensure its hardware is in line with what developers are experiencing on consoles.

"We were also attracted by ARM's presence in Asia. The vast majority of our customers are based in Europe and North America. We knew that opening up Asia was going to prove a challenge while we remained a small organisation, but now we can tap into ARM's massive presence in China, Korea and Japan."

Laudick adds: "Ultimately, this as a great opportunity to support our customers and evolve the product, while expanding to new platforms and markets. ARM is keen to take this business to the next level."

Geomerics will be in their traditional place in the Business Centre at GDC, demonstrating Enlighten on console, mobile and PC.

"We also have some exciting new announcements about Enlighten that will be revealed at the show," Doran adds. ■

www.geomerics.com

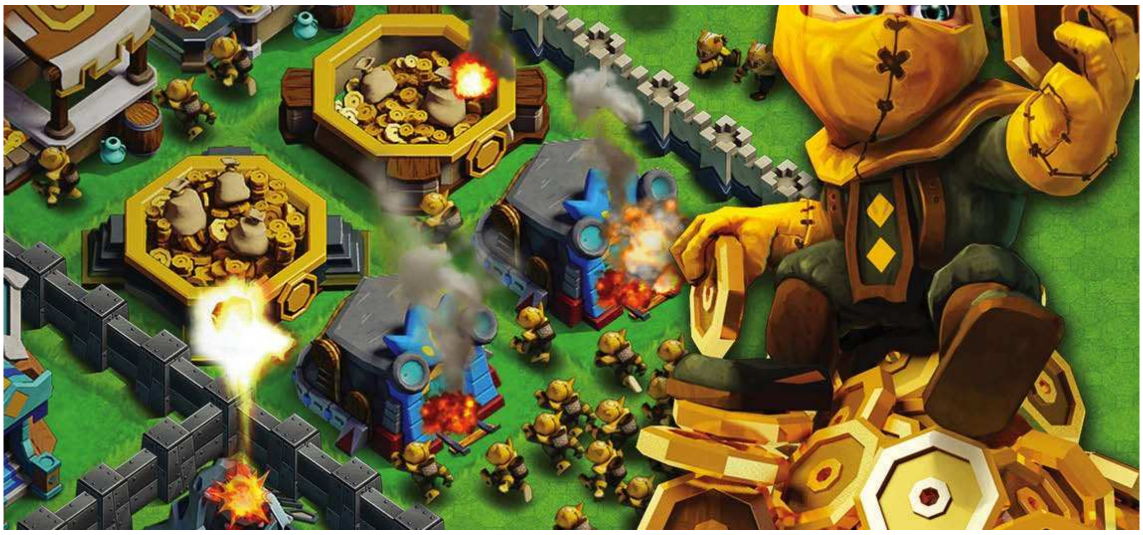
Find Geomerics and check out Enlighten in action at BS2622 in the North Hall

GDC 14

MADE WITH MARMALADE

Storming ahead to a new era

Storm8 explains why it's using Marmalade Juice to bring Kingdom Clash to Android



Kingdom Clash
Developer: Storm8
Platform: iOS, Android
www.storm8.com/games/kingdom-clash

Why Marmalade Mattered: Marmalade Juice enabled Storm8 to efficiently port its iOS title to Android using the same tools and programming language behind the original version
www.madewithmarmalade.com

THE MOBILE MARKET may be a gold mine for many developers but it is hampered for some by being split in two. Apple's iOS may have led the way at first, but with nearly one billion users, the Android market is just as vital when making your mobile game a success.

Porting from one to the other can be a cause of frustration, but Marmalade lowered the barriers last year with the announcement of Marmalade Juice, a toolset that enables developers to convert their iOS titles to Android quickly and easily.

The firm has spent the past year partnering with various mobile studios to show what Marmalade Juice can do, with Storm8 and its free-to-play game *Kingdom Clash* positioned as a prime example.

"We evaluated many products but ultimately went with Marmalade Juice because of how easy it was to use," says Storm8's engineering manager Justin Ng.

"All the other solutions we considered required us to either rewrite our code or make big changes to our workflow. And for a developer with over 40 games and more than 200 million users worldwide to service, that simply was not a scalable option.

"While we have launched other games on Android before, Marmalade Juice has given us a way to do that much more efficiently, which is very exciting."

The beauty of Marmalade Juice is that it is integrated into the Xcode development environment, something Ng says enables studios to develop on both iOS and Android with the same tools. It has also helped Storm8 structure its code better so that games work better on both platforms.

"We've even been able to refine our testing process," Ng adds. "Android has many different types of devices and we have to make sure that the game works well on all of them.

"Before using Juice, we ported our code line-by-line from Objective-C to Java, which was time consuming, boring and prone to error. With Juice, it's the closest we've ever seen to 'it just works'. We love how we can seamlessly support multiple platforms while only having a single codebase."

STORMING ONTO ANDROID

Efficient porting between the two mobile marketplaces is not just a matter of convenience. For studios like Storm8, a cross-platform solution is essential to their core business model.

> ***"Other iOS to Android solutions required us to rewrite our code. For a firm with over 40 games and more 200m users, this wasn't an option."***
>
> Justin Ng, Storm8

"Since Storm8 was funded, we've always had a multi-genre and multi-platform approach," explains Ng. "We don't just develop one type of game or focus on only one platform. We were one of the first mobile games developers to launch social games on iOS, and then again on both Google Play and the Amazon Appstore.

"Today, we're seeing the Android market grow at an exponential rate. [IT research firm] Gartner says that Android is poised to reach 1.1bn users worldwide across all devices this year. That reach is something that can't be ignored.

"Also, Storm8 employs a games-as-a-service strategy. This means that development does not end when we ship one of our games. In fact, it's the opposite as we consistently add new levels and features to keep the gameplay exciting for our users once a game is launched. It is this same strategy that has allowed us to grow our network to more than 50 million monthly active users.

"When you have such a massive audience, you want players on every platform to be able to access the latest features in your game as soon as possible, while not draining your resources. So being able to port new content and features from iOS to Android easily is crucial for us.

"Marmalade Juice has been an incredible and easy-to-use tool for our team, so I highly recommend it to other developers."

Storm8 is just one of many companies that uses Marmalade Juice, and Marmalade is constantly on the lookout for new partners to help showcase the tech.

"When we announced Marmalade Juice last year, we had a phenomenal amount of interest from large and small iOS studios alike," says Marmalade CEO Harvey Elliott.

"We invited a small number of these developers to come on board to help us road test the tech and those early innovators already have their apps monetising on Google Play. A recent report from Millennial Media claims that 78 per cent of iOS developers will also develop for Android in 2014, so the full release of Marmalade Juice is well timed. We're now welcoming enquiries from any game makers that want to take advantage of this efficient way to unlock iOS games for Android players. Anyone visiting GDC this year should come along to our stand to see a Juice demo and find out more." ■

Marmalade Juice will be widely available for developers to licence from March 2014. Learn more at ***www.madewithmarmalade.com/juice***

Storm8's Justin Ng (top) says Marmalade Juice has been invaluable to bringing Kingdom Clash to Android, while Marmalade CEO Harvey Elliott is keen to open new partnerships with mobile devs

Find Marmalade at booth 2510

Find Storm 8 at CC2518

GDC 14

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Dolby and its Audio API
p76

TOOLS SPOTLIGHT:
SCE's open-source PhyreEngine
p77

TRAINING SPOTLIGHT:
Centre for Digital Media
p78

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LUX AHOY
8,000

Find Dolby at booth 2324
GDC 14

Above: Luxurious Animals put the Dolby Audio API to use in its pirate casual game, Lux Ahoy

DOLBY IS FAMED for its surround sound processing tech that has enriched hundreds of entertainment products over the years, from cinema screenings to console games.

The audio specialist has a number of services available specifically for game studios and developers as part of the Dolby Developer programme.

Launched with the introduction of the Dolby Audio API for Android and plug-in for Unity, the service offers developers access to Dolby's suite of music tools and Android-specific development applications.

“Because many mobile devices and tablets include Dolby technologies, we've decided to allow mobile developers access to Dolby tech embedded into the hardware,” says Eric Ang, head of Dolby's Developer Program.

“We believe our solution should be included in all mobile apps and games. To that end, we've extended our Java solution to other cross-platform frameworks like Marmalade and Adobe Air.”

One developer that can attest the programme's benefits is New York-based digital creative agency Luxurious Animals with *Lux Ahoy*.

“Garrett Nantz, our co-founder and chief creative officer, is a huge audio enthusiast and thought our collaboration [with Dolby] would be a good way to show the benefits of quality audio in a casual game,” says Dan Federman, technical strategy director at Luxurious Animals. “The Dolby API was incredibly easy to work with and implement. The API package can be integrated seamlessly into existing projects and required no changes to our overall workflow. Adding the Dolby magic to our app was as easy as linking a JAR file with our project and calling Dolby-specific methods from our app. It took us just 15 minutes to add Dolby capabilities to our game.

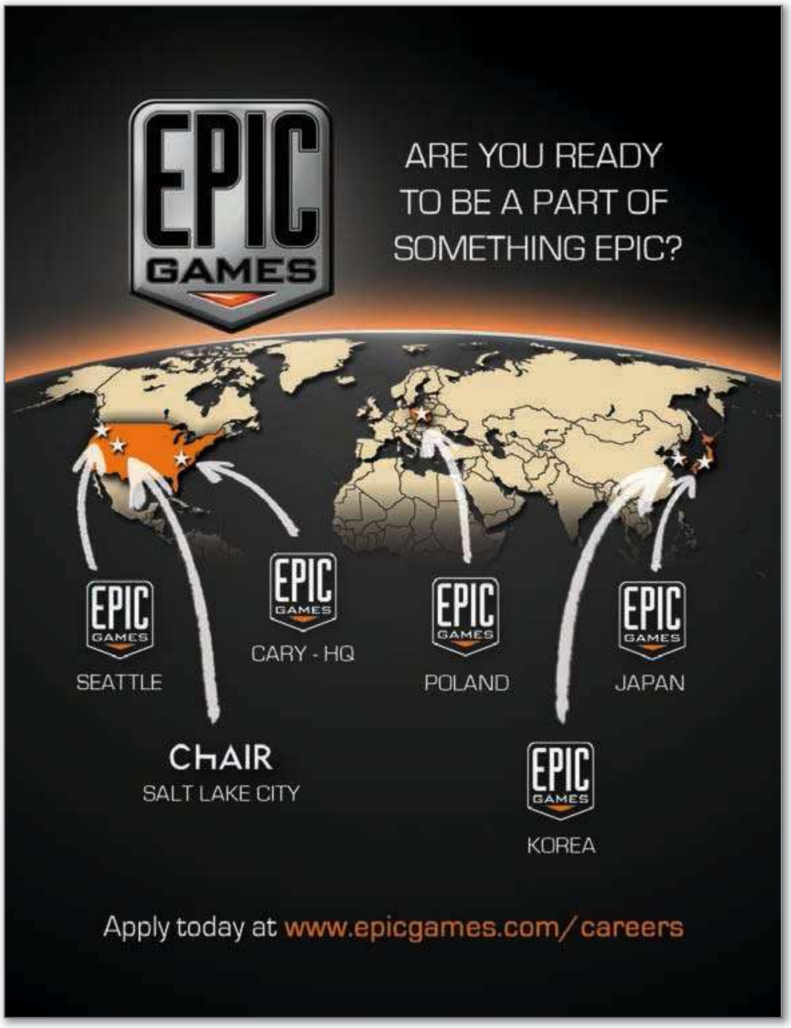
“Today, we have a fun casual game that not only has great looking graphics, but also a rich audio soundtrack that pulls the user in and holds their attention.”

Some of the other studios that have embraced the API offered by the audio firm include Gamelion Studio and Concrete Software.

The Dolby Developer programme is in its infancy, and its goal is to expand and increase adoption of its services.

“The easiest way for adoption at the moment is the Dolby Audio API – every Android developer should be using this,” conclude Ang. “We feel that audio can be drastically improved, and hope that our simple and quick solutions to mobile app and game developers can bring the audio experience to a new level.”

Epic Games **+1 919 870 1516** **www.epicgames.com**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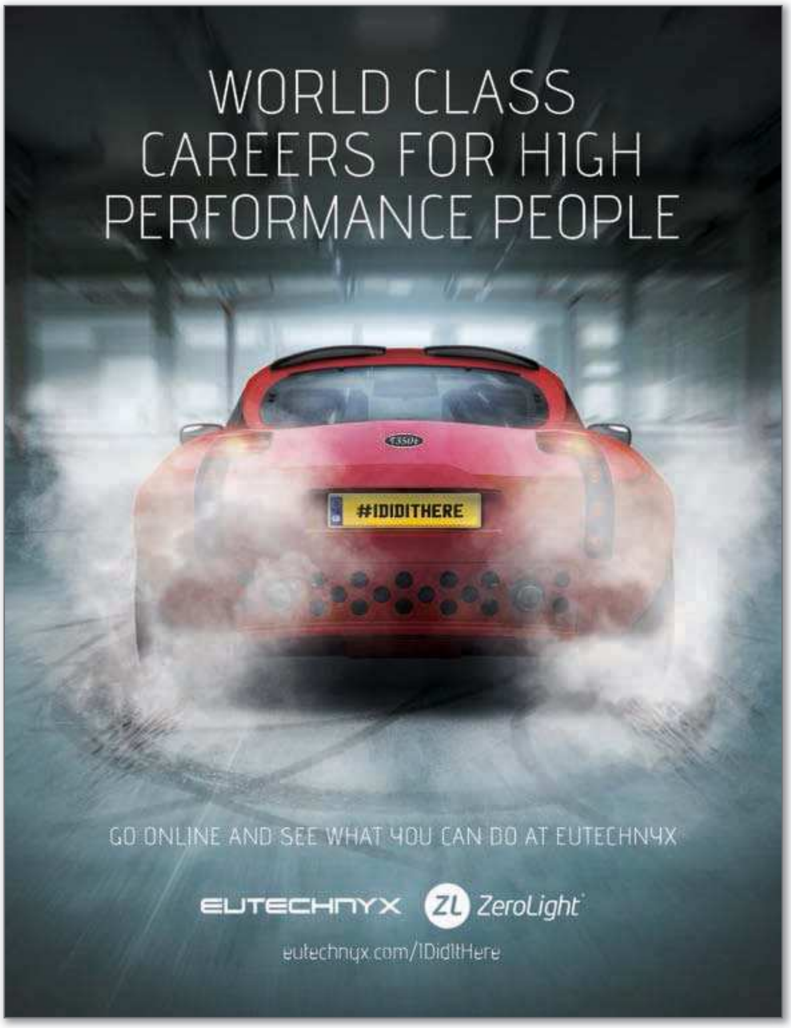
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TOOLS SPOTLIGHT

This month: **PhyreEngine (Sony Computer Entertainment)**

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United Kingdom

W: www.scedev.net

Find Sony
at booth 1202
GDC 14

Top-to-bottom: Secret Ponchos, Doki-Doki Universe and Super Motherload are all built with PhyreEngine

PRE-INSTALLED FREEWARE THAT'S genuinely useful is a rare occurrence. PhyreEngine is a games engine developed in-house by SCEE's R&D department to provide PlayStation developers with tools free of charge.

Initially started as a graphics engine for PS3, the engine was re-architected in version 3.0 to add support for PS4 and PS Vita and extended to include a wider range of features to become a more rounded engine.

"PhyreEngine's goals are to encourage both diversity and quality of games for PlayStation platforms," principal engineer Rich Forster (*right*) tells *Develop*. "We do that firstly by giving more emphasis to our platforms' strengths, but also by giving developers freedom."

Actively developed and supported for more than ten years (*read more in Develop #144*), PhyreEngine is updated three to four times each year. The latest version 3.8 was released just after PS4's November launch.

"PhyreEngine is optimised for PS4, PS Vita and PS3 using techniques specific to each platform. It is also free, cross-platform and full source is provided for both the engine and the toolset. The PhyreEngine licence is more permissive than the SDK traditionally is, allowing our licensees to port to and ship on other platforms, as well as allowing other middleware providers to reuse our optimised code.

"So we see ourselves as complementing other products rather than directly competing, and the engine is provided as a solid technical foundation upon which devs can get started and build their own technology."

> ***"PhyreEngine's goals are to encourage diversity and quality of games for PlayStation platforms."***
>
> Rich Forster, SCEE

The engine helps developers by getting them up and running quickly, so they can start writing code on all of the PlayStation platforms without constraining them to specific rituals.

"For example, Thatgamecompany exploited PS3s hardware to render their rich flora for *Flower*, without first having to build a rendering pipeline or worrying too much about multi-core scheduling," Forster says.

As well as Sony's partner studios, the engine has also made a significant contribution to indie titles such as, *Rocketbirds*, *Hotline Miami* and the well-received PlayStation 4 launch title, *Super Motherload*.

Some of the newest additions to the engine include extracting more power from the PS4 and adding Android and iOS support, which may also be used to port existing games.

"In the short term, we have a range of PS4 launch window titles using PhyreEngine to support," Forster concludes. "Long term, we plan to continue developing and supporting PhyreEngine, led by user feedback."

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TRAINING SPOTLIGHT

This month: **Centre for Digital Media**

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KIM VOLL, FACULTY at Vancouver's Centre for Digital Media, couldn't be more committed to helping students understand the fundamentals of game design.

Trained in computer science AI and a game jam organiser too, Voll says she sits at the crossroads between academia and the industry.

"Games have a lot to teach us about how the brain works and how we behave in interactive situations," Voll tells *Develop*. "I have studied cognition and artificial intelligence for many years, and continually use that knowledge when designing and developing games, as well as when researching existing games. Questions of motivation, learning, managing cognitive load, user interfaces and interaction can be asked of games and applied in game design."

Project work is central to almost all games course, and for the Foundations of Game Design, Voll says the intent is to help students practice the core principles of game design with focused hands-on examples that helps isolate those principles, while keeping the larger picture in mind with projects that span the course.

At CDM, game design starts on paper

Find Centre for Digital Media at booth 202
GDC14

Although the course makes use of several quick prototyping tools, such as Scratch, Unity and GameMaker, Voll is happy to stick with what is still the most common canvas for recording and shaping ideas.

"We use lots of paper," she explains. "The goal is not to create highly polished games, but to test mechanics and assumptions, so rapid prototyping is key."

Voll has been teaching at CDM for just over a year-and-a-half, and so has only finished one cycle of the course. Nonetheless, alumni from the institution have gone on to work for studios including EA and East Side Games, while others have started companies of their own.

The institute's home of Vancouver is also a hotbed of games development activity, giving students even greater opportunity to engage with the industry at large. Voll is one of the organisers of the Vancouver Global Game Jam and is also involved in Full Indie, the city's local independent developers meet-up.

"As an independent developer myself, this helps keep me connected to the beat of the industry in a very immediate sense, the knowledge of which I bring back to my students," she adds.

The institute's next aim is to create a second course that focuses solely on game development, where the end goal is to ship a 'profitable' project before the end of term. That course is in the design stages and is due to launch soon.

Voll concludes: "I have spent a considerable amount of time researching what companies are looking for from students and how we as educators can best facilitate that.

"Our course offers a unique opportunity to look at how the brain works in the context of games, and why players do what they do – and not always what you expect."

INFO

Course: Foundations of Game Design
Established: 2007
Staff: Kim Voll *(above)*
Notable alumni: Seth Marinello (Electronic Arts; worked on *Battlefield 4*, *Dead Space 3* and *Medal of Honor: Warfighter*) and Laurent Giannesini (Roadhouse Interactive; worked on *Qooco Hotel*, *Trophy Bingo*, *Spelling Bubbles*)

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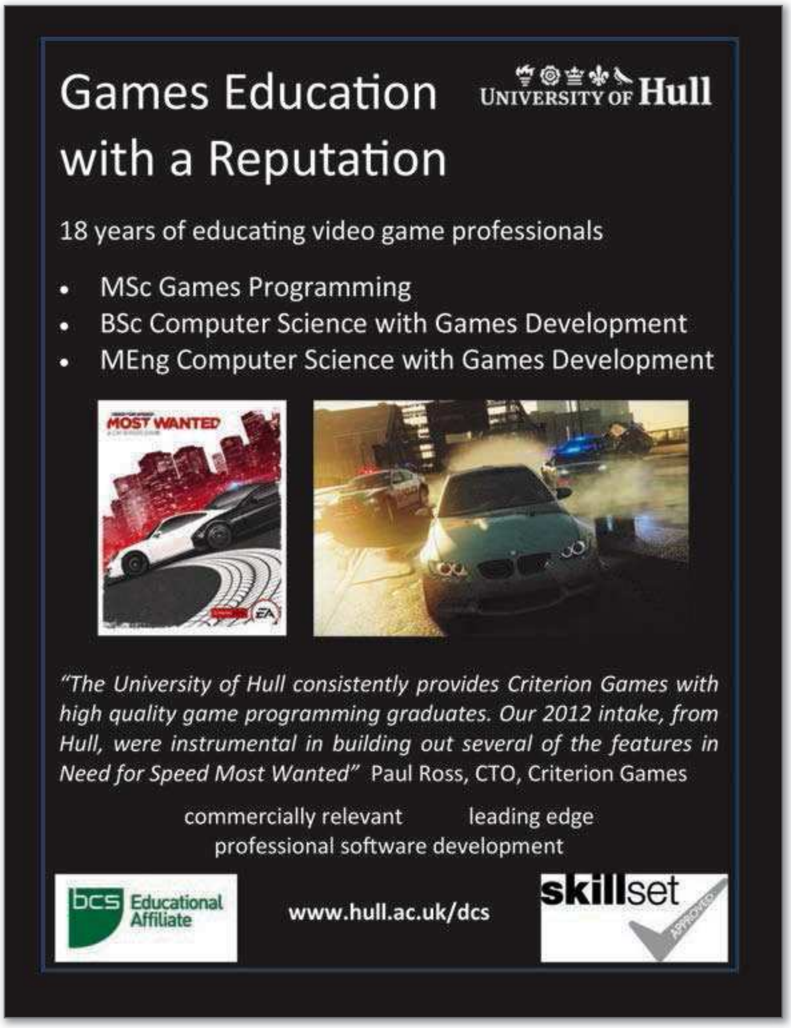

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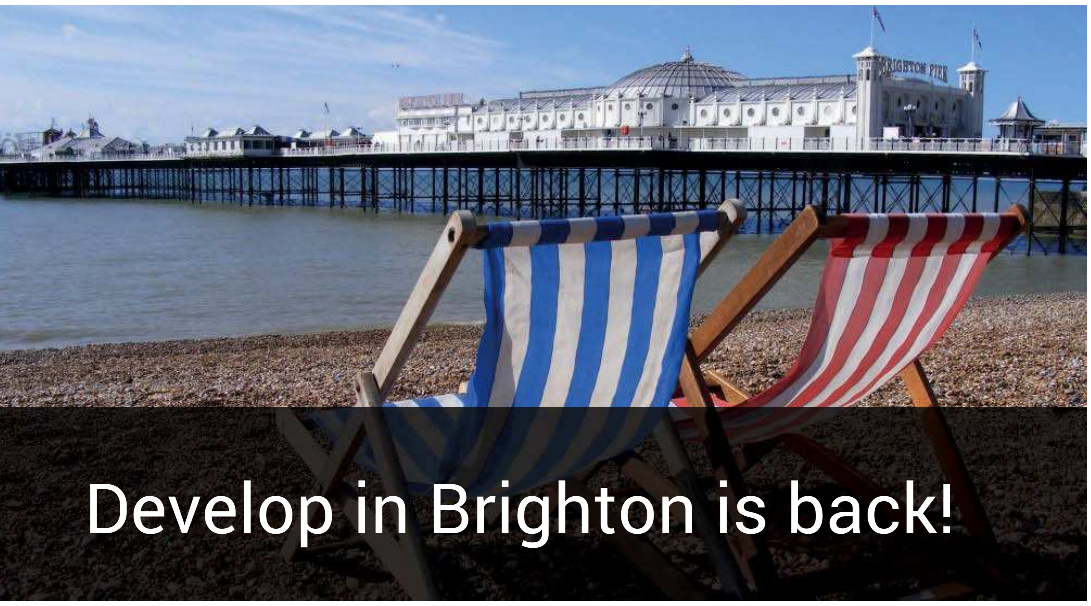

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Here's what developers say...

"Develop is a great place for all the video game industry to come together, network, swap stories and enjoy some time with each other."

Lee Schuneman
Microsoft Lift London

"Develop is very good for networking and a good way to catch up with people, have meetings and keep up with what's going on."

Ella Romanos
Remode

"You come to a place like Develop and you realise it is a community - Develop lets developers come together and hang out."

Barry Meade
Fireproof Studios

"Develop is amazing - I love it because it's very clever and everyone's got really good stuff to say."

Alice Taylor
Makielab

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Alien makers win London cup

Creative Assembly reclaimed the Develop Quiz trophy early this year after a tightly contested challenge from Side

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SOFT DRINKS

Creative Assembly celebrate reclaiming the Develop Quiz trophy

CREATIVE ASSEMBLY STORMED to victory at the first London Develop Quiz of the year after a closely fought battle of brains and game names.

The *Alien: Isolation* and *Total War* developer finished joint first on 73 points with creative services provider Side, but came out on top after naming more games beginning with C in 20 seconds than Side could muster starting with S.

The Indie All-Stars team 1 finished just one point off the top two in third, while defending champions Dead Good Media ended the night in joint eighth place.

Also present at the January quiz were newly unveiled London outfit Improbable, Jagex and previous quiz winners First Touch Games and Dead Good Media. ■

THE SCORES

Develop Quiz, London
Wednesday, January 29th results

Round Partner
IMPROBABLE

1.	**WINNERS:** CREATIVE ASSEMBLY	73
2.	SIDE	73
3.	INDIE ALL STARS 1	72
4.	FIREFLY STUDIOS	71
5.	SPACE APE GAMES	67
6.	CURVE	65
6.	FIRST TOUCH GAMES	65
8.	FUTURE GAMES OF LONDON	64
8.	DEAD GOOD MEDIA	64
10.	UKIE	63
11.	INDIE ALL STARS 2	59
11.	IMPROBABLE	59
13.	JAGEX	57
13.	CUBE	57
15.	BOSSA STUDIOS	53
16.	DATASCOPE	51
17.	WAVE STUDIOS	46

Playground Games victorious at first Leamington Spa Quiz

The Forza Horizon developer takes home the prestigious trophy and bragging rights after another tense tie-break

PLAYGROUND GAMES 2 took home the trophy at the first ever Leamington Spa Develop Quiz after emerging victorious following a neck-and-neck tie-break.

18 teams took part in the popular event, and developers clashed minds on both gaming and general knowledge questions, with rounds including name that movie poster, games mathematics and TV theme tunes.

Playground Games 2 finished the night joint top with Hardlight 2 on 76 points, and were then tasked with guessing the number of pages in *Develop* magazine since 2013 - with Playground Games 2 guessing closest. The correct answer was 784, if you were curious.

Thanks to all the teams that took part and Develop Quiz headline sponsor Codemasters and round sponsor Backspace for making the night yet a great success.

The next Develop Quiz will return to London on May 14th. If you want to join in on the fun, book now and contact **Jess.Farnan@intentmedia.co.uk** to avoid disappointment. ■

Playground Games 2, winners of the first Develop Quiz in Leamington Spa

THE SCORES

Develop Quiz, Leamington Spa
Wednesday, February 26th results

Round Partners

CODEMASTERS
back space
invest
WARWICK DISTRICT COUNCIL

1.	**WINNERS:** PLAYGROUND GAMES 2	76
2.	HARDLIGHT 2	76
3.	PLAYGROUND GAMES 1	74
4.	CODEMASTERS 1	73
5.	FREESTYLE GAMES	72
5.	ARCH CREATIVES	72
5.	FULL FAT	72
8.	PIXEL TOYS	70
9.	INDEPENDENT INDIES	69
10.	CODEMASTERS 2	67
11.	BACKSPACE	66
12.	RADIANT WORLDS	64
13.	LUMO DEVELOPMENTS	60
14.	ENGINE ROOM GAMES	59
15.	FIRST TOUCH GAMES	55
15.	HARDLIGHT 1	55
17.	EXIENT	52
18.	AUDIOMOTION	45

We are Playground Games

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THE FAQ PAGE: SEAN MURRAY

Develop grills respected figures from the global games industry

Who are you and what do you do?
Sean Murray, and I'm founder of Hello Games. Really, though, I'm a programmer.

What are you working on right now?
Mostly on a game called *No Man's Sky*, which is maybe the world's first "open universe" game, and then sometimes on *Joe Danger,* which is about a little man on a motorbike.

What was the first video game or product that you ever worked on in the industry?
My very first game out of uni was for Criterion, but it got cancelled. At the time, Criterion was a tiny studio, a little like Hello Games is now. The first project I worked on that got released was *Burnout 3*.

Hello Games' Sean Murray (below) has a variety of games under his belt, including Burnout 3 and the Joe Danger series

What was the first video game you ever played, and did you enjoy it?
Probably *Space Invaders* in the arcade. I would have been about three at the time, and could only just reach the joystick. In my head, I was amazing, and have memories of crowds gathering to watch. My brother recently told me that was because I didn't understand you had to put a coin in, and would stay 'playing' the demo, while people waited patiently.

What was the most recent video game you ever played, and did you enjoy it?
Right now I'm playing something called *ShootMania*, which is very underrated. It's a bravely focused game, to the point of minimalism. The FPS genre has gone down a road of recharging health, team multiplayer and lessened difficulty. It's nice to get back to my *Quake* roots with something more difficult and skill-based. Having said that there's a Hello Games clan for *ShootMania*, and I'm the worst player of a pretty good team.

What is your favourite game ever?
Impossible question. Please don't ask me that!

How many hours a week do you spend playing video games?
Sometimes an hour or two, but if something grips me then maybe 20-plus.

> ***"Video games development should be the most imaginative industry to work in. It used to be."***
>
> Sean Murray, Hello Games

What area of the games industry needs more 'investment'?
Education in games development. My generation grew up with *Mario*, programming Amstrads and Amigas. The current generation is growing up with *Minecraft* and iPhones. They want to make games, they understand it better than we did, but there is less focus than ever on programming and fewer clear routes into the industry.

What do you enjoy about the industry?
Working with talented people, who share a lot of the same interests. We're hiring at the moment, and it's incredibly exciting because we are such a small team and new people have such a huge and instant impact.

What disappoints you about the industry?
We have become homogeneous. The difference between each iteration of *Call of Duty* or any big franchise is becoming smaller. I could line up screenshots from a dozen FPSes and you probably couldn't tell me which was which. We should be the most imaginative industry to work in. We used to be.

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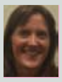

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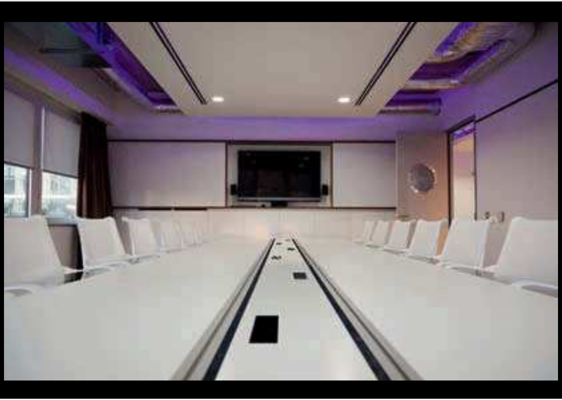

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